UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

RECORD OF DECISION AMENDMENT

Outboard Marine Corporation Superfund Site

Waukegan, Lake County, Illinois

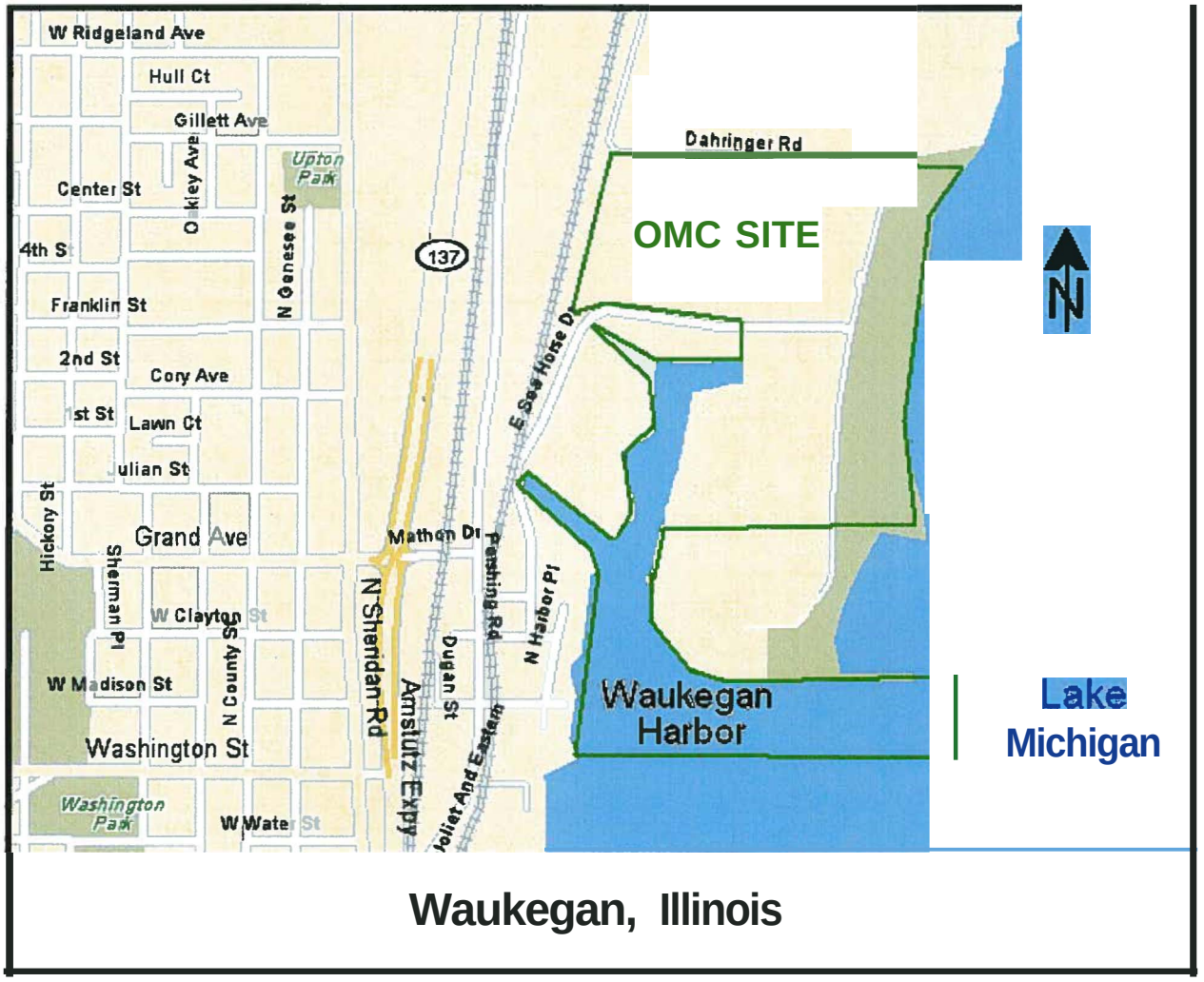
Selected Remedial Alternative for the Waukegan Harbor Site (Operable Unit #1)

October 2009

Cover photo credit: City of Waukegan, Eng. Dept.

This 2007 aerial photo shows the entire Outboard Marine Corporation (OMC) Superfund site in Waukegan, Illinois. North is at the top of the frame. The OMC site includes the Waukegan Harbor site, the OMC Plant 2 (or "North Plant") site (the large building at the top of the photo), and the Waukegan Manufactured Gas and Coke Plant site (cleared area in center of frame). Lake Michigan can be seen to the east of the sand dune and beach areas.

Below is a map of Waukegan for comparison:



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DECLARATION

Selected Remedial Alternative for the OMC Waukegan Harbor Site (OU #1)

Site Name and Location

Outboard Marine Corp. (OMC) Waukegan Harbor site, Waukegan, Lake County, IL

CERCUS identification number: ILD000802827

The OMC Waukegan Harbor site is the first of four operable units of the OMC National Priorities List (NPL) site.

Statement of Basis and Purpose

This decision document presents the selected amended remedial action for the OMC Waukegan Harbor site, Operable Unit #1 (OU #1) of the OMC Superfund site, Waukegan, Illinois. The United States Environmental Protection Agency (U.S. EPA), in consultation with the Illinois Environmental Protection Agency (Illinois EPA), chose the remedy in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for the OMC Waukegan Harbor site.

Assessment of the Site

The response actions selected in this Record of Decision (ROD) Amendment are necessary to protect the public health or welfare or the environment from the actual or threatened release of hazardous substances, pollutants, or contaminants into the environment.

Description of the Selected Remedy

U.S. EPA selects Alternative 02 as the amended remedial action for the Waukegan Harbor site. The selected remedy consists of the following tasks:

- Hydraulically dredge sediment from the harbor where the polychlorinated biphenyl (PCB) concentration exceeds 1 *mg/kg* (or "part per million" (ppm»;
- Dewater the dredged sediment in Geotubes® (or an equivalent geotextile product) and consolidate the dewatered sediment into a cell on the OMC Plant 2 site;
- Filter recovered water and discharge by diffusion back into the harbor;
- Place a cap on sediment next to harbor walls that cannot be safely dredged;
- Place a six-inch sand layer on the dredged harbor areas to achieve a 0.2 ppm PCB surface-weighted average concentration (SWAC) in the sediment; and
- Monitor PCB levels in harbor-caught fish and sediment to track cleanup progress.

The selected remedy will comply with or meet the requirements for a waiver of federal and state applicable or relevant and appropriate requirements (ARARs). Specifically, U.S. EPA has concluded that it is technically impracticable to treat water that will accumulate from the dewatering operations to meet the State of Illinois discharge limitation for mercury at 1.3 nanograms per liter (ng/L) (Part 35 of the Illinois Administrative Code (IAC) Section 302.504) prior to discharge. U.S. EPA will filter the water before discharge via diffusion into the harbor and this action will yield mercury levels in the filtered water of 10 ng/L or less; however, the Agency has determined that there are no reliable and practicable treatment technologies available that would be capable of treating mercury to meet the required 1.3 ng/L mercury limit. U.S. EPA also concludes that the approach will be protective because the volume of water in the harbor will be more than ten times than the volume of water to be discharged. Therefore, the Agency projects that the 1.3 ng/L mercury limit will not be exceeded in the harbor water body during the discharge due to dilutive effects.

Significant Differences

OMC hydraulically dredged the northern portion of Waukegan Harbor in 1990-1992 to achieve a 50 ppm PCB cleanup level in the sediment in accordance with the 1984 ROD. This ROD Amendment changes the target sediment PCB cleanup goal to 0.2 ppm SWAC. The cleanup goal will be achieved by hydraulically dredging sediment that is at 1 ppm PCBs or higher and then placing a six-inch clean sand layer over the dredged areas. Also, OMC created three PCB containment cells on-site during the first cleanup action to contain dredged sediment that averaged about 500 ppm PCBs [Toxic Substances Control Act (TSCA)-regulated material]. This action calls for on-site consolidation of dredged sediment into a containment cell as well; however, the design of the new cell will not be as robust as that of the original three cells because the PCB levels in the sediment to be cleaned up will average about 5 ppm PCBs or less and thus is not TSCA-regulated material.

Future Use Considerations

Implementation of the selected remedial action herein will not place restrictions on future maintenance dredging activities by the United States Army Corps of Engineers in the non-capped areas of the harbor. Since fish consumption advisories will likely remain for some time after dredging is complete, the site will not immediately allow for unlimited use (UU) or unlimited exposure (UE). Illinois EPA will continue to conduct a fish monitoring program to track this risk factor, however.

Statutory Determinations

The selected remedial action is protective of human health and the environment, complies with or meets the requirements for a waiver of federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

The Superfund statute and the NCP establish an expectation that U.S. EPA will use treatment technology to address the principal threats at a site wherever practicable. However, U.S. EPA considers the PCB-impacted sediment at the Waukegan Harbor site to present a low level, long-term threat to human health or the environment and to not be a principal threat. Thus, the statutory preference for treatment is not being met because existing sediment treatment processes were found to be either not effective for PCBs at the relatively low concentrations in the harbor or not implementable at the scale required for the site.

U.S. EPA will perform a statutory five-year review of the selected remedial action to determine whether the remedy is or will be protective of human health and the environment because the cleanup will result in hazardous substances, pollutants, or contaminants remaining on site in excess of levels allowing for UU/UE.

ROD Data Certification Checklist

U.S. EPA has included the following information in the Decision Summary section of the Waukegan Harbor ROD Amendment. More detailed site information is included in the Administrative Record for this ROD Amendment (begins on Page x).

- The contaminants of concern and their concentration levels (see Page 12);
- Baseline risks represented by the contaminants of concern (see Page 21);
- Cleanup levels established for the contaminants of concern and the basis for these levels (see Page 24);
- How source materials constituting principal threats are addressed (see Page 31);
- Potential land use that will be available at the site as a result of the selected remedy (see Page 32);
- Estimated capital and operation and maintenance costs for the remedy, including present worth and discount rates (see Page 35); and
- Key factor(s) that led to selection of the remedial actions for the OMC Plant 2 operable unit (see Page 32).

State Concurrence

The State of Illinois has indicated its intention to concur with the selected remedy. The Letter of Concurrence will be attached to this Record of Decision Amendment upon receipt.

Approved by: Richard C Karl 10-30-09

Richard C. Karl, Director — Date
Superfund Division
U.S. EPA Region 5

State concurrence letter

State concurrence letter

Administrative Record List of Documents
OMC/Waukegan Harbor Site ROD Amendment

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	07/00/06	CH2M HILL	U.S. EPA	Risk Evaluation for Development of a PCB Sediment Cleanup Level - Waukegan Harbor Area of Concern (SDMS 10: 313319)	46
2	04/00/08	CH2M HILL	U.S. EPA	Remedial Investigation Report OMC Waukegan Harbor Site (SDMS 10: 313320)	122
3	05/15/08	Caroll, G., National Gypsum Company A. Langlois, Lafarge North America, Inc. P. Graham, St. Marys Cement Co.	Mathur, B., U.S. EPA	Letter re: Support of the Waukegan Harbor Proposed Superfund Remedy (SDMS 10: 313322)	2
4	05/16/08	Goeks, T., NOAA	Adler, K., U.S. EPA	Letter re: Remedial Considerations for the OMC Waukegan Harbor Operable Unit (SDMS 10: 313323)	3
5	05/19/08	Schreiber, J., Waukegan Harbor Citizens Group	Adler, K., U.S. EPA	Letter re: Waukegan Harbor Superfund Cleanup Alternatives - Unit 1 (SDMS 10: 313324)	8
6	09/10/08	Clark, M., U.S. EPA	Adler, K., U.S. EPA	Memorandum re: Evaluation of Human Health Risks/PCB Cleanup Levels at Waukegan Harbor (SDMS 10: 313325)	3

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
7	10/00/08	CH2M HILL	U.S. EPA	Feasibility Study Report OMC Waukegan Harbor Site (SDMS ID: 313321)	122
8	10/13/08	Keiser, J. & D. Shelton, CH2M HILL	Adler, K., U.S. EPA	Memorandum re: Correction of Risk Evaluation Calculations for the Waukegan Harbor RI/FS (SDMS ID: 313326)	6
9	10/00/08	U.S. EPA	Public	EPA Proposes Cleanup Plan for Harbor Pollution / OMC Waukegan Harbor (SDMS ID: 313327)	8
10	(pending)	State	U.S. EPA	Concurrence letter Waukegan Harbor Record of Decision Amendment	

Administrative Record List of Documents
OMClWaukegan Harbor Site ROD Amendment

UPDATE #1
JUNE 2009

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	*06/14* 1880	Forty-Eighth Congress, Session I	File	1880 Rivers and Harbors Act 21, Stat. 180 Chap. - An Act Making Appropriations for the Construction, Repair, Completion and Preservation of Certain Works on Rivers and Harbors and for Other Purposes	211
2	*07/05* 1884	Forty-Eighth Congress, Session I	File	1884 Rivers and Harbors Act 23, Stat. 133 Chap. - An Act Making Appropriations for the Construction, Repair, and Preservation of Certain Public Works on Rivers and Harbors and for Other Purposes	229
3	*01/25* 1900	Root, E., Secretary of War	Speaker of the House of Representatives	Letter re: Examination and Survey of Waukegan Harbor, IL w/Attachments	
4	*06/13* 1902	Fifty-Seventh Congress, Session I	File	1902 Rivers and Harbors Act P.L. 57-154 Chap. - An Act Making Appropriations for the Construction, Repair, and Preservation of Certain Public Works on Rivers and Harbors and for Other Purposes	1079
5	*03/08/30*	The Chief of Engineers, U.S. Army	Dempsey, S., Chairman. Committee on Rivers & Harbors,	Letter Transmitting Report to the Board of Engineers for Rivers and Harbors on Review of Reports Heretofore Submitted on Waukegan Harbor, IL	4
6	*07/03/30*	Seventy-First Congress, Session II	File	1930 Rivers and Harbors Act 46, Stat 918 Chap. - An Act Authorizing the Construction, Repair, and Preservation of Certain Public Works on Rivers and Harbors and for Other Purposes	847

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
7	*12118nO*	Congressional Record	Public	Conference Report on H.R 19877, Rivers and Harbors and Flood Control Acts of 1970 - House	8
8	*12119nO*	Congressional Record	Public	Conference Report on H.R 19877, Rivers and Harbors and Flood Control Acts of 1970 - Senate	7
9	02/23/06	Karl, R, U.S. EPA	Hyde, R, Mayor, City of Waukegan	Letter re: Notice of Federal Lien on Former OMC North Plant and Containment Cells	
10	05/15/84	Adamkus, V., U.S. EPA	Public	Record of Decision for the Outboard Marine Corporation Site	
11	03/31/89	U.S. EPA	Public	Record of Decision Amendment for the Outboard Marine Corporation Site	
12	09/30/97	U.S. EPA	Public	First Five-Year Review Report for the Outboard Marine Corporation Site	
13	09/26/02	Muno, W., U.S. EPA	Public	Second Five-Year Review Report for the Outboard Marine Corporation Site	
14	05/13/07	City of Waukegan	Defendants	Second Amended Complaint w/Selected Exhibits No. 07 C-5008	
15	09/19/07	Rednour, E., Illinois EPA	Adler, K., U.S. EPA	Letter re: IL EPA Concurs with the Findings of the Sept. 2007 Five-Year Review Report for the Outboard Marine Corporation Site	
16	09/26/07	Karl, R , U.S. EPA	Public	Third Five-Year Review Report for the Outboard Marine Corporation Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
17	05/15/08	Carroll, G., National Gypsum Co., A. Langlois, Lafarge North America, Inc. & P. Graham, St. Marys Cement Company	Mathur, B., U.S. EPA	Letter re: Support for a Proposed Remedy Similar to the GLWQA/GLLA Program at the Waukegan Harbor OMC Site	
18	05/19/08	Schreiber, J., Waukegan Harbor Citizens Advisory Group	Adler, K., U.S. EPA	Letter re: Cleanup Alternatives at the Waukegan Harbor OMC Site	
19	06/20/08	Masterson, J., Lake County News-Sun	Public	News Article: "Link Sinks Washington's Push for Industry Friendly Harbor"	
20	06/24/08	Lake County News-Sun	Public	News Article: "Our View - Power Politics"	
21	10/00/08	U.S. EPA	Public	Proposed Plan: EPA Proposes Cleanup Plan for Harbor Plan (English and Spanish)	
22	10/31/08	Lake County News-Sun	Public	News Release: EPA Proposes to Amend Harbor Cleanup Plan, Public Meeting: Nov. 13, Comment Period: Nov. 3, 2008 - Jan. 5,2009	
23	10/31/08	Lake County News-Sun	Public	News Release: EPA Proposes to Amend Harbor Cleanup Plan, Public Meeting: Nov. 13, Comment Period: Nov. 3,2008- Jan. 5, 2009 (Spanish)	
24	11/13/08	Jensen Reporting	U.S. EPA	Public Meeting Transcript: Proposed Cleanup Plan for the Outboard Marine Corporation (OMC) Plant 2 Site NOTE: This is mislabeled - Should read "Waukegan Harbor Site"	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION PAGES
25	11/24/08	Westlaw	File	Memorandum Opinion and Order re: City of Waukegan v. Defendants No. 07 C-5008
26	11/25/08	Larson, R., Lake County News-Sun	Public	News Article: "Capping Harbor Pollution Moves City Forward"
27	12/02/08	Jeep, J., Jeep & Blazer, LLC	Adler, K., U.S. EPA	Letter re: Proposed Remedial Action Plan for Waukegan Harbor - City Requests for an Extension of Public Comment Period Until Feb. 11, 2009 w/ Attachments
28	12/12/08	Lake County News-Sun	Public	News Release: EPA Proposes to Amend Harbor Cleanup Plan, Comment Period Extended
29	12/12/08	Nueva Semana	Public	News Release: EPA Proposes to Amend Harbor Cleanup Plan, Comment Period Extended (Spanish)
30	01/00/09	U.S. Army Corps of Engineers Detroit District	File	Great Lakes Update 2008 Annual Summary
31	01/02/09	Jeep, J., Jeep & Blazer, LLC	Adler, K., U.S. EPA	Letter re: Proposed Remedial Action Plan for Waukegan Harbor - City's Second Request for an Extension of Public Comment Period Until Feb. 11,2009 w/Attachments
32	01/05/09	Residents	U.S. EPA	Three Public Comment Sheets re: Proposed Plan for the Waukegan Harbor OMC Site
33	01/05/09	Jeep, J., Jeep & Blazer, L.L.C.	Gage, F., U.S. EPA	Letter re: FOIA Request Dated Aug. 8, 2008 submitted on Behalf of the City of Waukegan with Attachments

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
34	01/15/09	Washington, E., State Representative, Waukegan	Editor, News-Sun	Letter to the Editor: The Little 3	
35	01/20/09	Jeep, J., Jeep & Blazer, L.L.C.	Martin, T., U.S. EPA	Letterre:Waukegan Harbor Remedial Alternative - Public Comment by City of Waukegan Second Lien Letter w/ Attachments	
36	01/21/09	Loven, J., Chicago Tribune	Public	News Article: "President Obama Orders Sweeping Ethics Rule for White House, Freezes Senior Level Salaries"	
37	01/23/09	Jeep, J., Jeep & Blazer, L.L.C.	Karl, R , U.S. EPA	Letter re: U.S. EPA Declines 2nd Request for Extension to Comment Period for the Waukegan Harbor OMC Site Proposed Plan for ROD Amendment	
38	01/26/09	Hyde, R, Mayor City of Waukegan	Karl, R, U.S. EPA	Letter re: City of Waukegan's 2nd Request for an Extension of the Public Comment Period for the Waukegan Harbor OMC Site	
39	01/29/09	Goeks, J., NOAA	Adler, K., U.S. EPA	Letter re: Proposed Plan for the Waukegan Harbor Portion of the OMC Site	
40	02/02/09	Schreiber, J., Waukegan Harbor Citizens Advisory Group	Adler, K., U.S. EPA	Letter re: Proposed Cleanup Plan for the Waukegan Harbor Portion of the OMC Site	
41	02103/09	Beals, J., Resident	Adler, K., U.S. EPA	Letter re: Support of Option 0-2 Clean-up of Waukegan Harbor (FAX Transmission)	
42	02/03/09	Karl, R, U.S. EPA	Hyde, R, Mayor, City of Waukegan	Letter re: City's Request for Second Extension of Public Comment Period on the Proposed Plan for the Waukegan Harbor ROD	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
43	02/03/09	Rogner, J., U.S. Dept of Interior	Adler, K., U.S. EPA	Letter re: Comments to the Proposed Waukegan Harbor Cleanup Plan	
44	02/03/09	Henderson, D., Waukegan Port District	Adler, K., U.S. EPA	Letterre: Waukegan Harbor Proposed Cleanup Plan Comments	
45	02/04/09	Carroll, G., National Gypsum	Adler, K., U.S. EPA	Letter re: Company Comments on OU1 Proposed Plan for the OMC - Waukegan Harbor Site (FAX Transmission)	
46	02/04/09	Jeep, J., Jeep & Blazer, L.L.C.	Adler, K., U.S. EPA	Letter re: City of Waukegan's Public Comment to the RI/FS Report for OMC Waukegan Harbor Site	

Administrative Record List of Documents

OMClWaukegan Harbor Site ROD Amendment

UPDATE #2

OCTOBER 2009

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	*04/24/97*	Ohio EPA, Foster Wheeler Environmental Corporation & DRI/McGraw-Hill	File	Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy	25
2	*07100/02*	Larry Walker & Associates	Association of Metropolitan Sewerage Agencies	Mercury Source Control Pollution Prevention Program Evaluation (Final Report)	62
3	*10/26/09*	Jury, M., K. McKenna & J. Keiser, CH2M Hill, Inc.	Adler, K., U.S. EPA	Technical Memorandum: Water Quality of Waukegan Harbor During Hydraulic Dredging Operations at the OMC WaUkegan Harbor Site	3

Acronyms and Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
CFR	Code of Federal Regulations
COC	Contaminant of concern
DNAPL	Dense nonaqueous phase liquid
ELCR	Excess lifetime cancer risk
FR	*Federal Register*
FS	Feasibility Study
HI	Hazard Index
IAC	Illinois Administrative Code
Illinois EPA	Illinois Environmental Protection Agency
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OMC	Outboard Marine Corporation
OU	Operable unit
PAHs	Polyaromatic hydrocarbons
PCBs	Polychlorinated biphenyls
ppb	Parts per billion (µg/kg or µg/L)
ppm	Parts per million *(mg/kg* or *mg/L)*
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SVOC	Semi-volatile organic compound
TACO	Tiered Approach to Cleanup Objectives (Illinois Administrative Code)
TCE	Trichloroethene
TI Waiver	Technical Impracticability Waiver
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile organic compound
yd^3	Cubic yards
L	Liter
mg/kg	Milligrams per kilogram (parts per million)
µg/kg	Micrograms per kilogram (parts per billion)
µg/L	Micrograms per liter
ng/L	Nanograms per liter (parts per trillion)

DECISION SUMMARY

Waukegan Harbor Site
Waukegan, Lake County, Illinois

A. Site Name, Location, and Brief Description

The Waukegan Harbor site is the first of four operable units (OU) of the Outboard Marine Corporation (OMC) National Priorities List (NPL) site. The harbor is a largely man-made channel located along Sea Horse Drive in Waukegan, about 40 miles north of Chicago arid 10 miles south of the IllinoislWisconsin border (see Figure 1). The other three OMC site operable units include the Waukegan Manufactured Gas and Coke Plant site ("Waukegan Coke Plant")(OU #2), the PCB Containment Cells (OU #3), and the OMC Plant 2 site (OU #4) (see Figure 2).

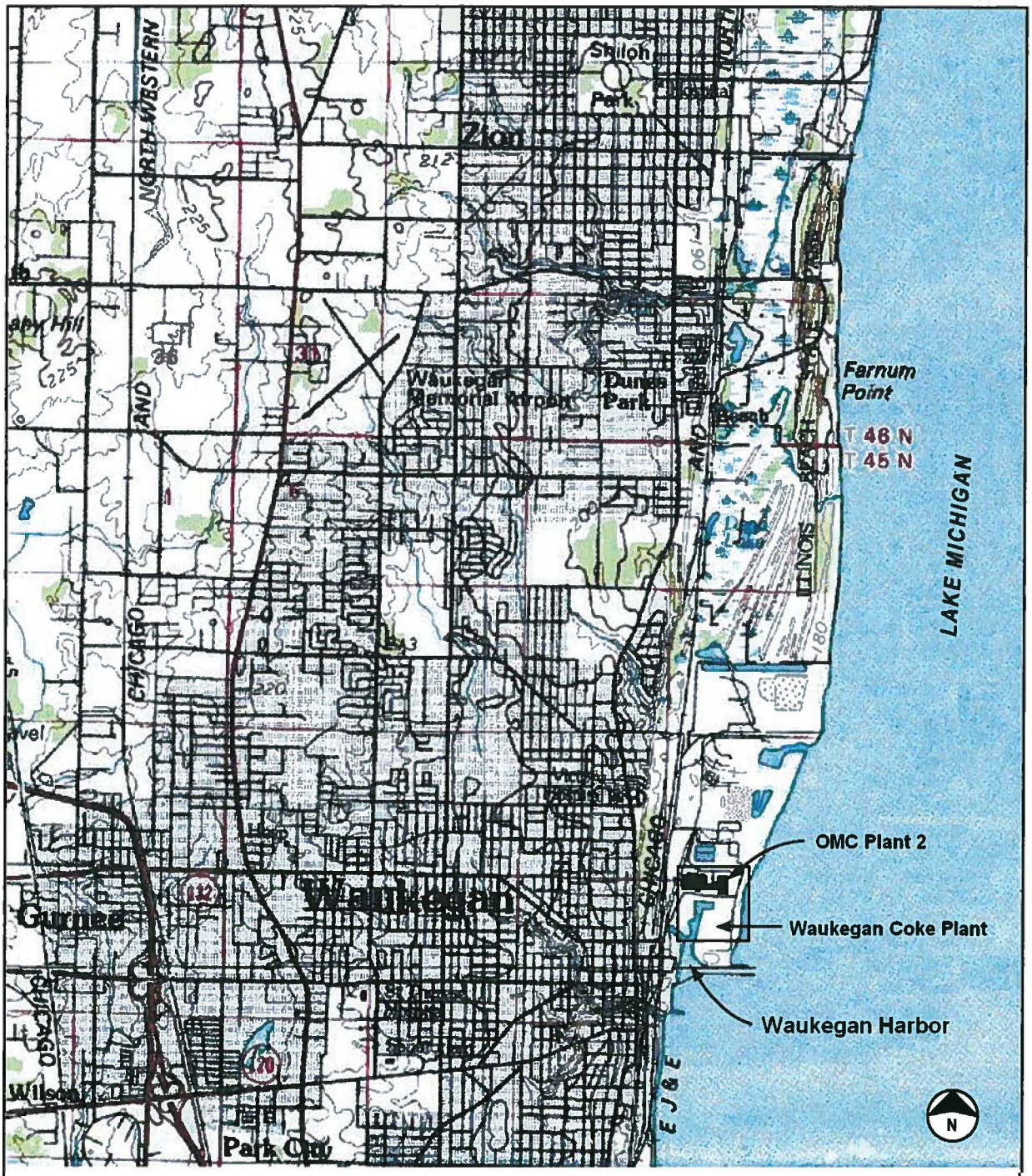
The CERCUS identification number for the OMC site is ILD000802827.

The U.S. Environmental Protection Agency (U.S. EPA) is the lead agency and the Illinois Environmental Protection Agency (Illinois EPA) is the support agency for the Waukegan Harbor site. From 1980-1994, U.S. EPA used potentially responsible party (PRP) and Superfund trust fund monies to complete a remedial investigation/feasibility study (RI/FS), remedial design, and remedial action at the site. From 1993 to present, the Agencies have used PRP, Superfund, and state monies to conduct operation and maintenance activities at the site that include monitoring PCB levels in fish taken from the harbor. After U.S. EPA completed the third Five Year Review Report (FYRR) for the OMC site in September 2007, U.S. EPA used Superfund trust fund monies to conduct a second RI/FS at the harbor. The Agency is now planning to spend Superfund trust fund monies to conduct the design of the remedial action selected herein.

The OMC Plant 2 facility discharged polychlorinated biphenyl (PCB)-containing hydraulic and lubricating oils via sewer lines into Boat Slip #3 in Waukegan Harbor, thereby becoming the source of very high-level PCB contamination [as high as 500,000 mg/kg or "parts per million" (ppm)] in harbor sediment. Fish in the harbor then became contaminated with PCBs above recommended levels for safe, long term consumption.

U.S. EPA signed a Record of Decision (ROD) in 1984 to dredge sediment from the northern harbor area to achieve a 50 ppm PCB cleanup level. OMC conducted the harbor cleanup in 1990-1992 and placed the dredged sediment into three containment cells it constructed for the cleanup action. OMC thermally treated some of the more highly contaminated sediment to capture the PCB oil for off-site destruction prior to placement into the containment cells. OMC commenced operation and maintenance of the PCB containment cells in 1993.

OMC declared bankruptcy in December 2000 and ceased all local operations in August 2001. Excluding the harbor and the small portions of the Waukegan Coke Plant site that were acquired by Larsen Marine Service, Inc., the OMC site is now owned by the City of Waukegan. The City has plans to redevelop the OMC site for mixed use.



Source: USGS Waukegan Quadrangle Map

0 3,000
Feet

Figure 1

Site Location Map

Waukegan Harbor and Vicinity

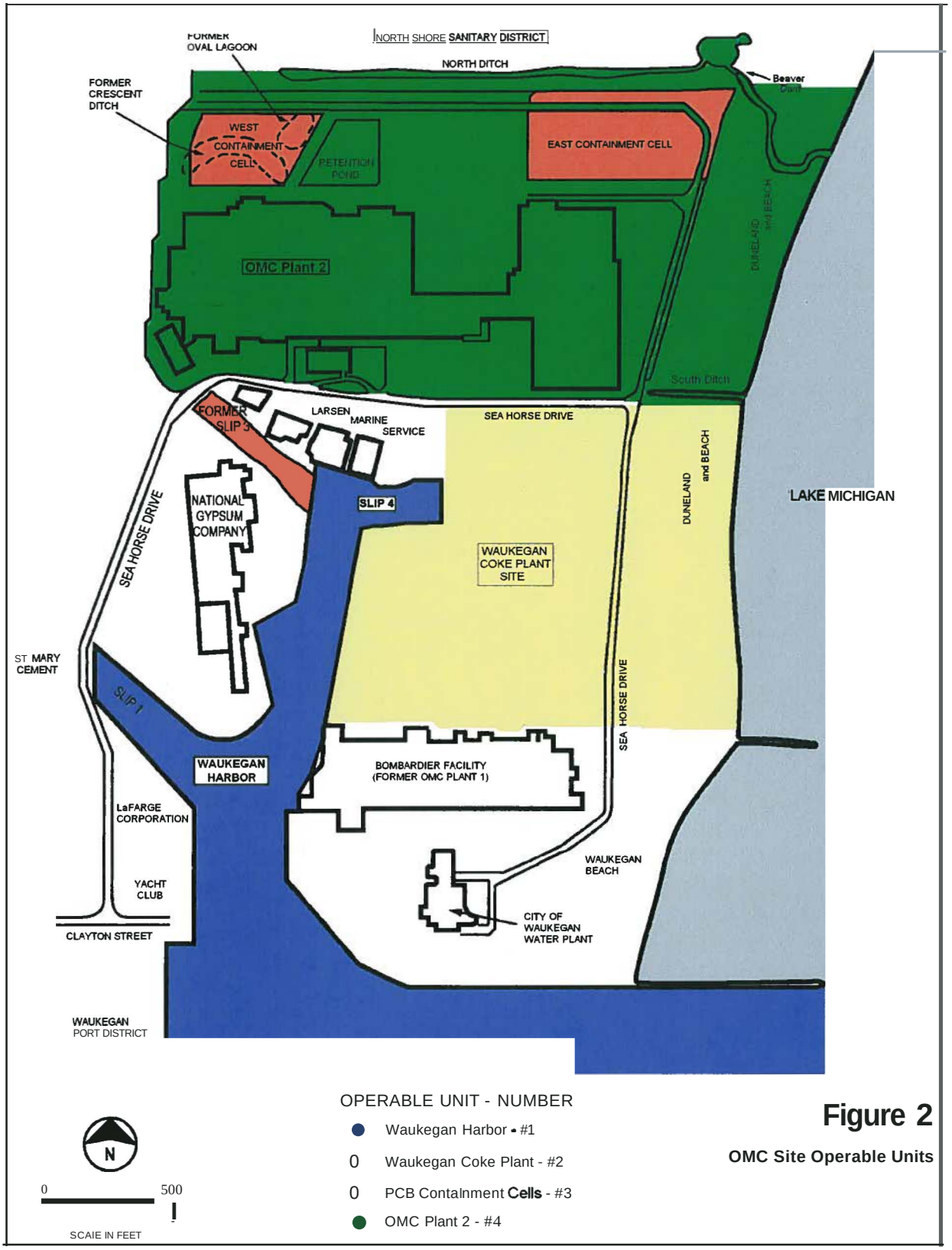


Figure 2

OMC Site Operable Units

B. Site History and **Enforcement** Activities

1. Site History

The OMC Plant 2 operable unit contains an abandoned facility in which OMC made outboard motors from about 1948 until December 2000. OMC used polychlorinated biphenyl (PCB)-containing hydraulic and lubricating oils in its production lines beginning in about 1961 until 1972 and routinely discharged some of the fluids into holding lagoons or ponds located just outside the building. Fluids were also discharged via sewer lines into Boat Slip #3 in Waukegan Harbor, thereby becoming the source of very high-level PCB contamination in the sediment in the northern harbor area. OMC later reported that it had plugged its sewer discharge lines leading to the harbor in 1976.

Cleanup work at the OMC site began in the early 1980s right after Superfund was passed into law. The State of Illinois had documented PCB contamination in the harbor in the mid-1970s and was able to trace it back to the OMC Plant 2 facility. The very high PCB contaminant levels in harbor sediment led U.S. EPA to place the OMC site (which included Waukegan Harbor) on the interim NPL as the state's top priority site in October 1981. U.S. EPA completed a Hazard Ranking System scoring package and proposed the OMC site for the first NPL on December 30, 1982 (47 Fed. Reg. 58476), with final rule listing of the site occurring on September 8, 1983 (48 Fed. Reg. 40674). The effective date of NPL listing was 30 days following Federal Register publication.

2. Enforcement

The United States, on behalf of U.S. EPA, filed a complaint in federal court in 1978 against OMC under the Clean Water Act and other statutes with regards to PCB contamination in Waukegan Harbor sediment. The complaint was amended in 1982 to seek relief under CERCLA. In 1988, U.S. EPA negotiated a consent decree with OMC under which OMC would conduct the harbor cleanup action U.S. EPA had selected in the 1984 ROD. The court entered the consent decree in 1989. The decree also called for OMC to conduct operation and maintenance of the cleanup action under U.S. EPA oversight.

In September 2000 U.S. EPA issued a special notice of liability letter to OMC and identified it as one of several PRPs at the Waukegan Coke Plant operable unit. OMC was not a signatory to the subsequent 2004 remedial action consent decree for the Waukegan Coke Plant site, however, because it had filed for bankruptcy protection[1] in December 2000.

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1 The United States filed a proof of claim in bankruptcy court in 2001, citing the potential cleanup costs of extensive environmental contamination at the OMC Plant 2 site and at other OMC-owned sites in the region as the basis for the claim. The United States and the OMC bankruptcy estate agreed to settle part of the claim in 2005 and the estate then made a payment into a Superfund Special Account solely for use in cleaning up groundwater contamination at the OMC Plant 2 site. The rest of the claim was settled when the estate made additional payments to U.S. EPA in 2006 and 2008, although, the total amounts paid only equal a very small fraction of the estimated remaining cleanup costs for the OMC Plant 2 site.

3. Previous OMC Site Cleanup Actions

As discussed above, U.S. EPA issued a ROD in 1984 to clean up Waukegan Harbor sediment after documenting PCB contaminant levels exceeding 1000 ppm in the sediment as well as in the soil on the OMC Plant 2 facility grounds. After completing the remedial design, U.S. EPA issued a ROD Amendment in 1989 to modify the 1984 cleanup approach. OMC then cleaned up Waukegan Harbor in 1990-1992 by dredging the northern harbor area to achieve a 50 ppm PCB cleanup level. OMC converted harbor Boat Slip #3 into a PCB containment cell and placed some of the dredged material into the former slip. Prior to placement, sediment containing greater than 500 ppm PCBs was thermally treated to remove PCB oil for off-site destruction. Over 30,000 gallons of PCB oil were recovered and shipped off-site to be incinerated.

OMC also excavated PCB-laden soils on the north side of its OMC Plant 2 property to achieve the 50 ppm PCB cleanup level and placed these soils into two newly created PCB containment cells ("West Containment Cell" and "East Containment Cell" - see Figure 2) located on the north side its OMC Plant 2 facility. Treated harbor sediment was also placed into these containment cells. OMC operated and maintained the three PCB containment cells from 1993 until it abandoned its unsold Waukegan properties (including the OMC Plant 2 site) in December 2002 during its bankruptcy proceedings. Immediately after abandonment of the OMC Plant 2 property, U.S. EPA assumed responsibility for the operation and maintenance of the PCB containment cells for a one-year period until December 2003 when Illinois EPA assumed responsibility for this work.

OMC constructed Boat Slip #4 in the harbor in 1990 as a part of the 1990-1992 harbor cleanup action to replace former Boat Slip #3 which was being used by Larsen Marine Service as its harbor slip. Some of the soils excavated from Boat Slip #4 contained creosote and other polyaromatic hydrocarbons (PAHs), leading to the discovery of the adjacent Waukegan Coke Plant site on OMC-owned property (see Figure 2). At this point U.S. EPA broke the OMC site up into operable units for ease of addressing site environmental problems. Waukegan Harbor was designated as OU #1, the Waukegan Coke Plant site as OU #2, and the PCB containment cells as OU #3. Shortly after OMC Plant 2 was abandoned in 2002 U.S. EPA designated that site as OU #4.

U.S. EPA completed a remedial investigation and feasibility study (RifFS) in February 1999 at the Waukegan Coke Plant site (OU #2) and issued a ROD for the site in September 1999. Several former owner/operator PRPs, but not OMC, are now cleaning up the Waukegan Coke Plant site under U.S. EPA oversight.

U.S. EPA completed several removal actions and a RI/FS at the OMC Plant 2 site (OU #4) from 2003 to 2007. The Agency issued a ROD to clean up the PCB-contaminated facility and soil on the site in September 2007 and issued a second ROD to clean up trichloroethylene (TCE) contaminated groundwater and a TCE dense non-aqueous phase liquid (DNAPL) deposit in February 2009. U.S. EPA completed the design for the facility and soil cleanup actions in July 2008 and plans to complete the design of the groundwater and DNAPL cleanup actions by November 2009.

C. Community Participation

U.S. EPA, in consultation with Illinois EPA, issued a proposed plan for cleanup of the Waukegan Harbor site to the public for review and comment on November 3, 2008. U.S. EPA placed the proposed plan and other site documents into the Administrative Record and the information repository maintained at the U.S. EPA Records Center (U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL) and at the Waukegan Public Library (128 N. County St., Waukegan, IL). In November 2008, the Agency placed two notices (one in English and the other in Spanish) of the availability of the proposed plan and other documents in the Waukegan *News-Sun* and the *Nueva Semana,* respectively. Each is an area newspaper of wide circulation. The proposed plan was also printed in Spanish and U.S. EPA brought copies to area churches to distribute to parishioners.

U.S. EPA scheduled a public comment period on the proposed plan from November 3, 2008, to January 5,2009. U.S. EPA held a public meeting on November 13, 2008, in Waukegan to present the proposed plan and take public comments. The Agency answered questions about the actual and potential health risks posed by contaminants at the site and the remedial alternatives that the Agency evaluated in response to the health risks. U.S. EPA's responses to public comments received during the comment period are included in the Responsiveness Summary section of this Record of Decision. Initially, the public comment period was scheduled to run until January 5, 2009; however, the City of Waukegan requested and was granted a 30-day extension of the comment period until February 4,2009. U.S. EPA declined further requests for an additional 30-day extension because the 90-day comment period was sufficient time for the public to review the administrative record and formulate comments on the proposed plan.

U.S. EPA has attended many meetings of the Waukegan Community Advisory Group (CAG) over the past several years to help keep the CAG updated on the many cleanup actions underway at the OMC site. The Agency attended a CAG meeting on January 15, 2009, to discuss the Waukegan Harbor proposed plan and answer questions about the proposal.

U.S. EPA has also met periodically with various City of Waukegan officials to discuss cleanup progress at the OMC site, particularly the OMC Plant 2 site, and to hear the City's plans for future redevelopment of the OMC site and for the harbor itself.

D. Scope and Role of the Response Action

The Waukegan Harbor site is one of four OUs of the OMC site and cleanup activity is occurring at all four sites:

At the Waukegan Harbor site, the selected response action amends the 1984 ROD and will address residual PCB contamination found in harbor sediment to the extent practicable using current technology. It is expected to be the final cleanup action for the harbor under Superfund, as average PCB levels in the sediment will be reduced to

below the state and federal cleanup level. The lowered PCB levels would reasonably allow for resumption of maintenance dredging of the harbor by the U.S. Army Corps of Engineers (USACE) and/or private concerns. U.S. EPA plans to complete the design phase for the new harbor response action in early 2010.

The Waukegan Coke Plant site (OU #2) has two media of concern - soils and groundwater. Soils cleanup work was completed at the site in 2005 and construction of the groundwater remedial action was completed in November 2008. U.S. EPA estimates that the active operation and maintenance efforts for the groundwater cleanup will run between three and eight years from November 2008, after which time the site will enter into a monitored natural attenuation (MNA) phase for several decades.

The operation and maintenance phase is underway for the three PCB containment cells (OU #3) and no further response actions are planned or necessary. The City of Waukegan now owns the cells and has plans to reconfigure the surface of the former Boat Slip #3 cell to allow for commercial re-use of the property. Current plans are to build a boat storage facility on top of the cell for use by Larsen Marine Service, Inc. Construction is planned to perhaps begin in early 2010.

U.S. EPA identified four media of concern in which chemical contaminants may exceed human health or ecological risk-based cleanup levels at the OMC Plant 2 site (OU #4). These media include PCB-impacted soil and sediment, the PCB-impacted building, TCE-impacted groundwater, and a TCE DNAPL. The Agency selected cleanup actions for the soil and sediment and the PCB-impacted building media in a September 2007 ROD and it selected cleanup actions for the groundwater and DNAPL in February 2009.

U.S. EPA will clean up the OMC Plant 2 site by demolishing the facility and excavating impacted soil and sediment and then disposing of the debris into appropriate off-site landfills. The Agency completed the remedial design for these actions and cleanup construction is scheduled to begin in November 2009 and be completed by December 2010.

The Agency will clean up the groundwater and DNAPL at the OMC Plant 2 site using a combination of in situ bioremediation of groundwater, in situ soil mixing using zero valent iron in the DNAPL, and approximately a decade of MNA until groundwater cleanup levels are met. U.S. EPA began the remedial design phase for the groundwater and DNAPL cleanup actions in January 2009 and plans to complete it by November 2009.

U.S. EPA also plans to initiate construction of the groundwater and DNAPL cleanup actions in 2010 and complete construction by 2011 or 2012. At that point, all projected cleanup construction work would be completed for the OMC Plant 2 site. Thus, the Agency projects that completion of construction of the selected cleanup remedies for the OMC Plant 2 site and the Waukegan Harbor cleanup action selected herein will be the final cleanup remedies for the OMC NPL site.

E. Site Characteristics and Investigation Results

Waukegan Harbor is one of seven harbors on the Great Lakes maintained by the Chicago District of the USACE. The harbor is a largely man-made structure. A natural inlet was dug out in the late 1800s and early 1900s and portions of adjacent wetlands were filled to form its present shape. Nearly the entire harbor is bordered by 20- to 25-foot-long steel sheet piling. Figure 3 shows the current Superfund site boundary.

Figure 3: Aerial photo of OMC site (the Waukegan Harbor site is outlined in red)

Waukegan Harbor is divided into the following segments for ease of discussion:

- Approach Channel
- Outer Harbor
- Entrance Channel
- Inner Harbor
- Marina or Docking Area
- Inner Harbor Extension
- Slip #1
- Northern Harbor (includes Slip #4)

Figure 4 (next page) shows the harbor segments. The harbor consists of a federal

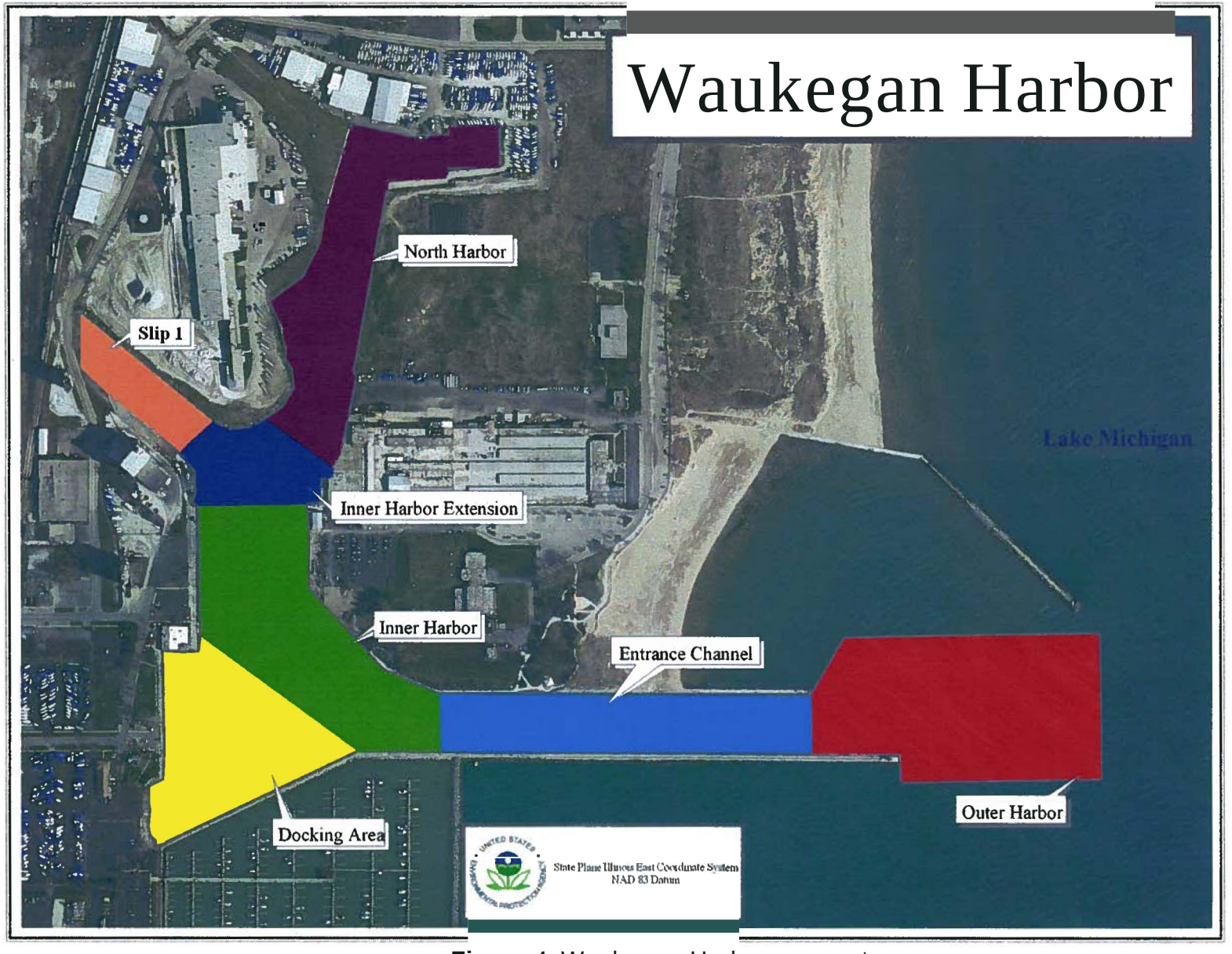


Figure 4: Waukegan Harbor segments

navigation channel and non-federal elements. The federal channel includes the Approach Channel, Outer Harbor, Entrance Channel, Inner Harbor, and Inner Harbor Extension segments. The Marina (or Docking Area), Slip #1, and Northern Harbor (plus Slip #4) segments are part of the non-federal harbor channel. The USACE is charged with maintaining the depth of the federal channel at 18 feet below the Low Water Datum (LWD) for Lake Michigan. The USACE, however, has not dredged the harbor to maintain this depth since the early 1970s due to the PCB contamination in the sediment. Congress authorized a depth of 23 feet below LWD for the federal channel in the harbor in 1970 but has never appropriated funds to complete the deepening of the harbor.

Waukegan Harbor serves both recreational boaters and commercial and industrial shippers (see also Section F). The current harbor depth appears to be adequate for recreational boaters and smaller commercial fishermen. However a maintenance depth of 18 feet below the LWD has required ships carrying supplies to the wallboard and cement manufacturers on the harbor to be loaded at less than capacity because of the shallow depths in the federal channel.

Area of Concern

The Great Lakes Water Quality Agreement requires federal, state, and provincial governments to designate Areas of Concern (AOCs) in the Great Lakes where conditions have caused or are likely to cause impairment of up to 14 beneficial uses of the AOC. The International Joint Commission (IJC), U.S. EPA, and Illinois EPA designated Waukegan Harbor as an AOC in 1981. This designation was prompted by the high PCB contaminant levels in the harbor sediment, which led the Agencies to identify a number of potential beneficial use impairments (BUIs) at the Waukegan Harbor AOC. The Waukegan Harbor BUIs include impairment to depth maintenance dredging (because the PCBs would cause sediment disposal costs to rise), to restrictions on consumption of fish and wildlife, and beach closings, although the beach closings are linked to e *coli* bacteria levels in the lake and not to the PCB contaminants in the sediment.

Geology

The surface geology in the harbor area is generally characterized by fill material placed over a fine-grained sand unit. Fill material, when present, averages 2 to 12 feet below ground surface and the sand unit is generally 20 to 25 feet thick. The sand overlies an 80-foot thick glacial till unit that consists of hard, grey clay that also contains sand and some gravel. The till overlies dolomite and shale bedrock layers. The harbor is cut into the sand layer and the bottom usually has up to several feet of fine-grained sediment overlying the till layer. Figure 5 (next page) shows a typical cross-section of the harbor.

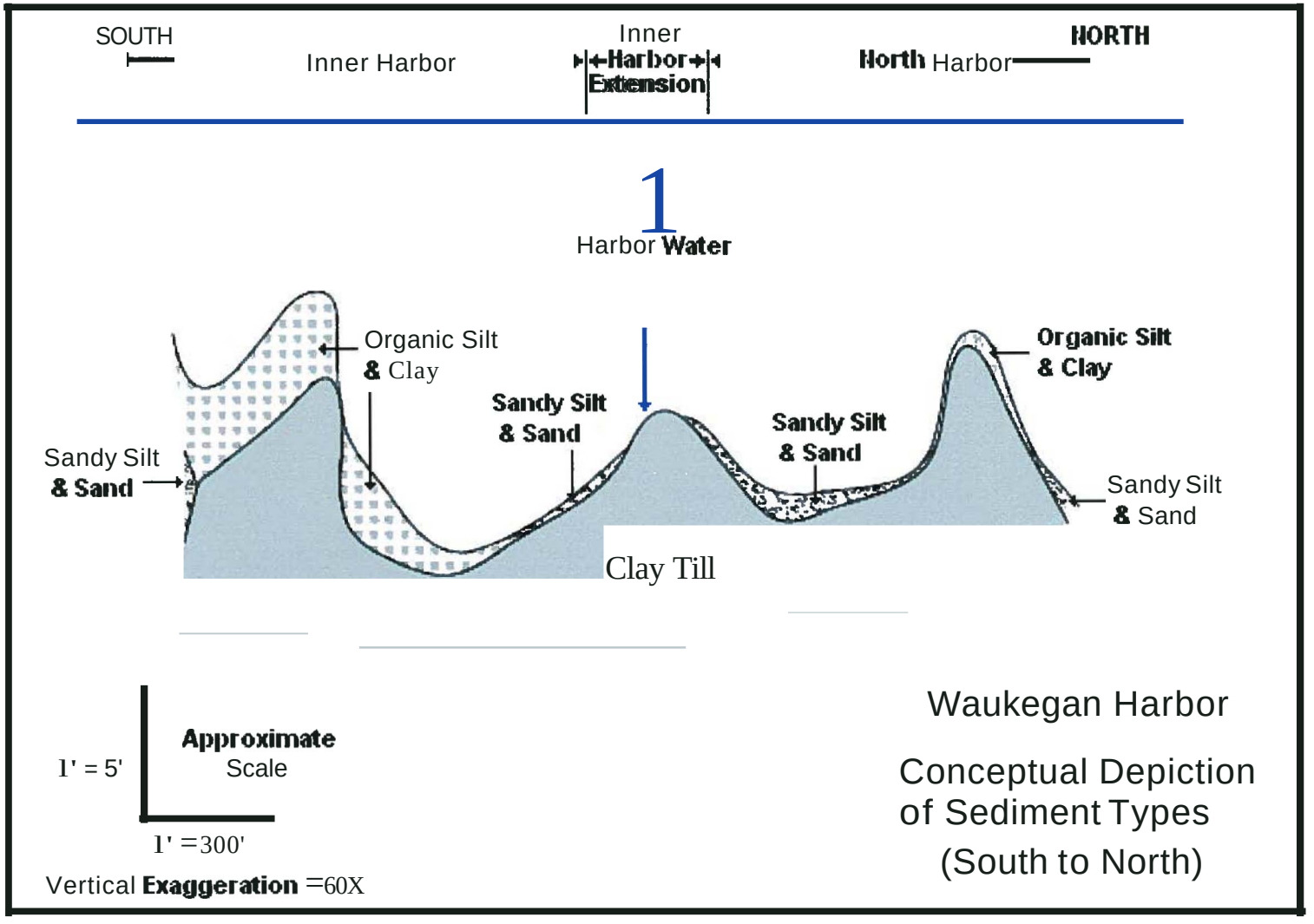


Figure 5: Cross section of Waukegan Harbor (South to North)

Hydrology

Waukegan Harbor is a somewhat closed system in that it was not built along a river, and there is no tributary flow through the harbor. However, wind driven "seiches" or water surges and direct waves off the lake contribute to an exchange of water in the harbor every 1 to 8 days, helping to prevent stagnation. Groundwater discharges into the harbor from the sand are mainly driven by precipitation on surrounding properties.

Because there is no tributary feeding Waukegan Harbor, sedimentation or "shoaling" rates are low. The USACE estimates that the shoaling rate for the Entrance Channel and Inner Harbor areas is 3,500 cubic yards/year (yd^3/yr). Much of the sediment deposited in the harbor is due to sand blowing over the harbor walls into the Entrance Channel from the adjacent municipal beach.

Previous Contaminant Levels

The Illinois EPA collected *effluent* samples from outfalls on Lake Michigan in the 1970s to identify potential sources of PCBs into Lake Michigan. In 1976, Illinois EPA notified U.S. EPA that OMC Plant 2 was discharging an estimated 9 to 10 pounds per day of PCBs into the harbor. The U.S. EPA collected 15 sediment samples in the harbor in 1976 and PCB results ranged from 0.1 ppm near the Entrance Channel to 4,200 ppm in Boat Slip #3. The State took additional sediment samples in 1985 and 1986 and saw 17,200 ppm PCBs in Boat Slip #3 with decreasing levels toward the harbor mouth. U.S. EPA reported that an estimated 50,000 yd^3 of sediment contaminated at above 50 ppm PCBs were in Waukegan Harbor with an even higher volume of sediments containing PCBs at 10 ppm or higher.

Tissue samples from harbor-caught fish were also taken and analyzed by the State to determine the impact of the PCB releases and because people actively fish in the harbor and consume their catch. As shown in Figure 6, PCB levels in carp tissue were well above the U.S. Food and Drug Administration (FDA) "Do Not Eat" advisory limit of 2 ppm before the OMC cleanup occurred in 1990. (The State nowadays issues fish consumption advisories when PCB levels in fish tissue are above 0.05 ppm.) Fish consumption advisories were posted at the northern harbor area to warn anglers about the presence of PCBs in their catches. After OMC completed the harbor cleanup action in 1992, the PCB levels in harbor-caught fish began to fall and the Illinois Department of Public Health directed that signs warning anglers not to eat fish caught in Waukegan North Harbor could be removed in February 1997.

Current Contaminant Levels

The State continues to take samples of fish from the harbor to check PCB levels. As shown in Figure 6, post-cleanup carp tissue samples remained above 4 to 5 ppm PCBs, which were above the FDA 2 ppm "Do Not Eat" advisory level and well above the State 0.05 ppm advisory level. PCB levels in all available harbor-caught (both resident and non-resident species) fish samples (rock bass, carp, blue gill, perch, etc.) taken from

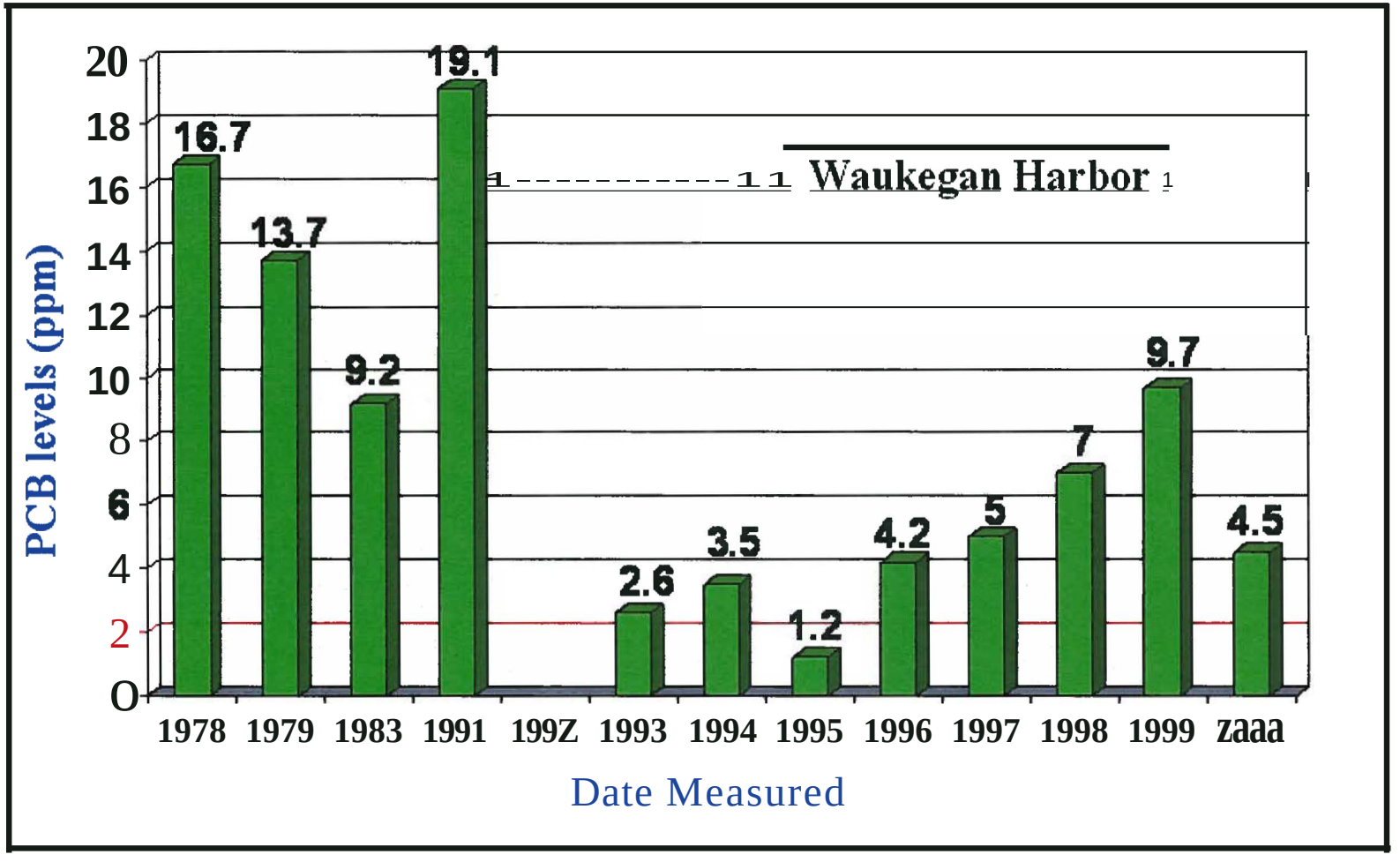


Figure 6: PCB levels in fish tissue (carp) - Waukegan Harbor

2000 to the present still are many times above the State advisory level. Thus, in January 2006, the State updated the fish consumption advisory for Waukegan Harbor to read that, "All sizes of white sucker and sunfish from Waukegan North Harbor of Lake Michigan should be limited to one meal per month because of elevated levels of PCBs. For all other Waukegan Harbor fish, follow the fish advisory for Lake Michigan." Based on the harbor-caught fish sampling results, the Third FYRR for the OMC site issued in September 2007 by U.S. EPA found that the original 50 ppm PCB cleanup level selected for the harbor cleanup in the 1984 ROD is not protective of human health and the environment.

U.S. EPA conducted sediment sampling in Waukegan Harbor in 2003 and 2005 to characterize the nature and extent of residual PCBs in the harbor. Only a few "hot spots" were found with PCB levels from 10 to about 30 ppm. The remainder of the sample results ranged from non-detect (NO) to 10 ppm, with an overall average PCB concentration in harbor sediment of about 2.5 ppm.

Of the five separate PCB compounds (Aroclors 1221, 1242, 1248, 1254, and 1260) that have been detected in historical and recent data within Waukegan Harbor sediments, Aroclor 1248 was the most frequently detected and at the highest concentrations. The maximum PCB concentrations in sediment were detected in the vicinity of the North Harbor, Inner Harbor, and Docking Area, with the highest PCB concentration of 36.6 ppm from a sample collected in the Docking Area. In general, the highest PCB concentrations occur at depths of less than 3 feet.

The findings relative to the nature and extent of PCB-impacted sediment in the various harbor segments include the following:

Slip 4-Sediment thickness is consistent within the slip, ranging between 7 and 13 feet. The average concentration of total PCBs in the Slip 4 sediments is 0.21 ppm, with over all low concentrations ranging between 0.24 and 0.45 ppm at locations where at least one Aroclor was detected.

North Harbor-Sediment in the North Harbor ranges from non-measurable to a thickness of approximately 14 feet. The average total PCB concentration in this segment is 4.9 ppm with concentrations ranging from 0.12 to 26.9 ppm at locations where at least one Aroclor was detected. The sediment from the northernmost portion of the North Harbor (Le., closer to the former source) contains the highest PCB concentrations.

Inner Harbor Extension-Sediment thickness in this segment ranges from non-measurable to 9 feet with a small zone in the south that is 14 feet thick. The average total PCB concentration is 1.8 ppm with concentrations ranging from 0.14 to 9.3 ppm at locations where at least one Aroclor was detected.

Inner Harbor-The center of the main shipping channel of the Inner Harbor has almost no measurable thickness of sediment. The sediment thickness along the northwestern

and southwestern sidewalls was measured to be up to 10 and 14 feet, respectively. The southern portion of the Inner Harbor has up to 11 feet of sediment. Higher concentrations (up to 7.47 ppm) of total PCBs in sediments were detected at depths of about 6 feet. The entire sediment column in the western portion of the Inner Harbor contiguous with the Docking Area was found to be contaminated with total PCB concentrations ranging from 1.7 to 9.6 ppm. The average total PCB concentration of the entire Inner Harbor segment is 4.0 ppm, with a concentration range of 0.13 to 32.3 ppm at locations where at least one Aroclor was detected.

Slip 1-The sediment thickness in Slip 1 ranges from less than one-tenth of a foot where boat traffic is centered to almost 13 feet near the seawalls. The total PCB concentrations range from 0.51 to 16.7 ppm at locations where at least one Aroclor was detected, with the highest concentration occurring in the northern portion. The average total PCB concentration in Slip 1 is 4.6 ppm.

Docking Area-Sediment thickness in the Docking Area ranges between 2 and 14 feet. The Docking Area contains the sediment deposit with the most consistent, higher total PCB concentrations. Consistent total PCB concentrations exist throughout the sediment column in the northernmost portion of the Docking Area. The average total PCB concentration in the Docking Area is 3.4 ppm with a concentration range of 0.10 to 36.6 ppm at locations where at least one Aroclor was detected.

Entrance Channel-The Entrance Channel sediment thickness varies from approximately 2 to 8 feet along its length and up to 15 feet along the northern wall. The average total PCB concentration is 1.0 ppm with a concentration range of 0.08 to 8.4 ppm total PCBs at locations where at least one Aroclor was detected.

Table 1 shows the estimated volumes of PCB-impacted sediment in the harbor with respect to PCB surface weighted average concentrations.

Table 1: Volume of impacted sediment

Harbor Segment	Volume Exceeding 1 ppm PCBs (Vd^3)	Existing PCB Levels (SWAC) (ppm)
Slip 4	500	0.37
Northern Harbor	28,000	2.84
Inner Harbor Extension	6,000	0.63
Slip 1	3,000	3.55
Inner Harbor	66,600	4.57
Marina	68,400	1.65
Entrance Channel	22,700	0.63
Total:	195,200	Composite SWAC: 1.8 ppm

Figure 7 (next page) shows the recent sampling locations and PCB levels in the samples and Figure 8 (following page) shows sediment thicknesses within the harbor.

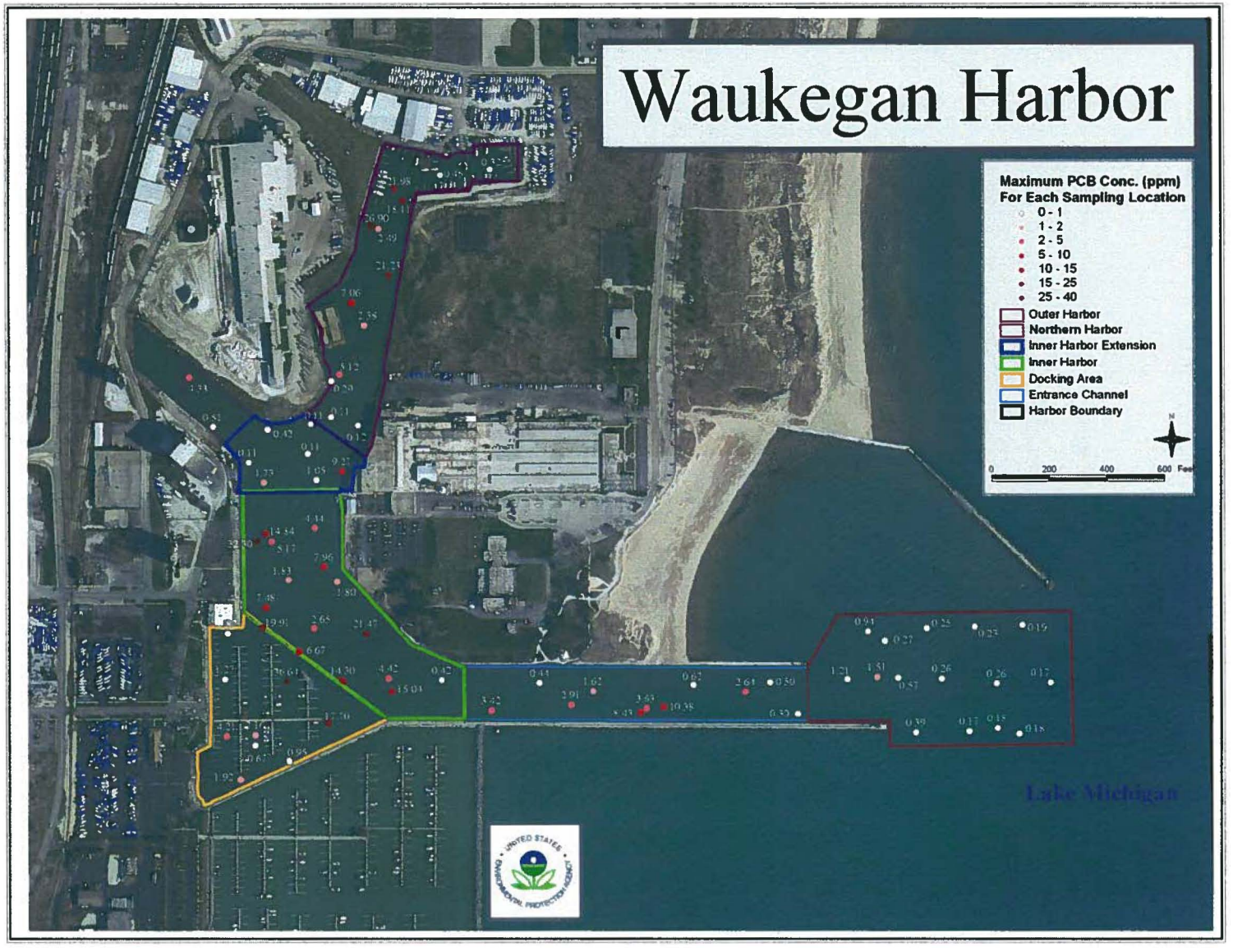


Figure 7: PCB levels (ppm) in Waukegan Harbor sediment

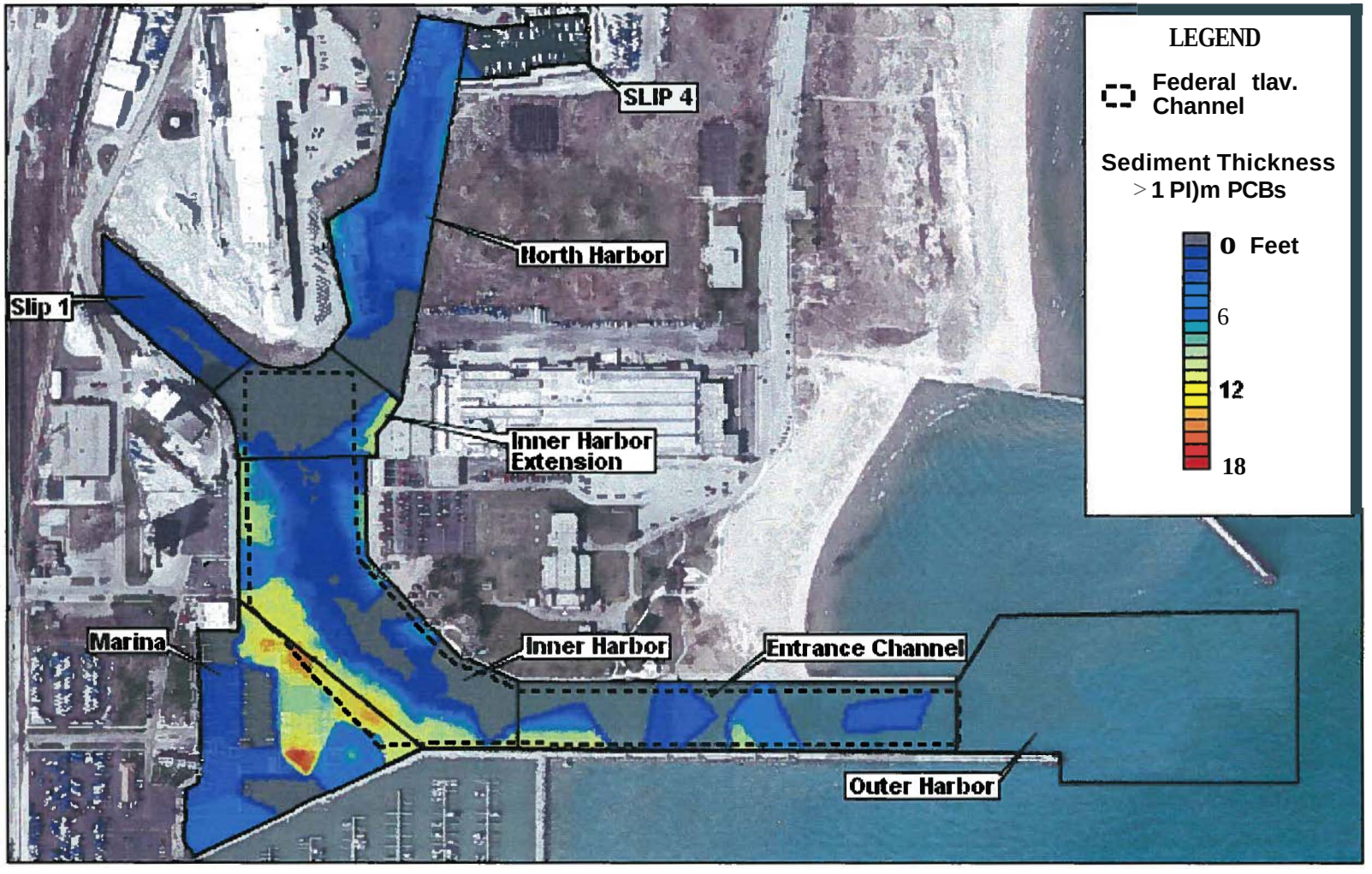


Figure 8: Waukegan Harbor sediment thicknesses

Conceptual Site Model

Figure 9 presents the conceptual site model for the Waukegan Harbor site. Basically, the PCBs in the sediment are bioavailable to bottom feeders such as carp as they forage in the sediment. Although PCBs are only very slightly soluble, sport fish bioaccumulate PCBs from the water column by uptake through the gills. The PCBs in the harbor sediment thus present a continual source of PCB contamination in harbor-caught fish, which then present a human health hazard, because people are consuming fish from the harbor. The sediments are too deep, however, to present a potential human dermal contact or ingestion hazard.

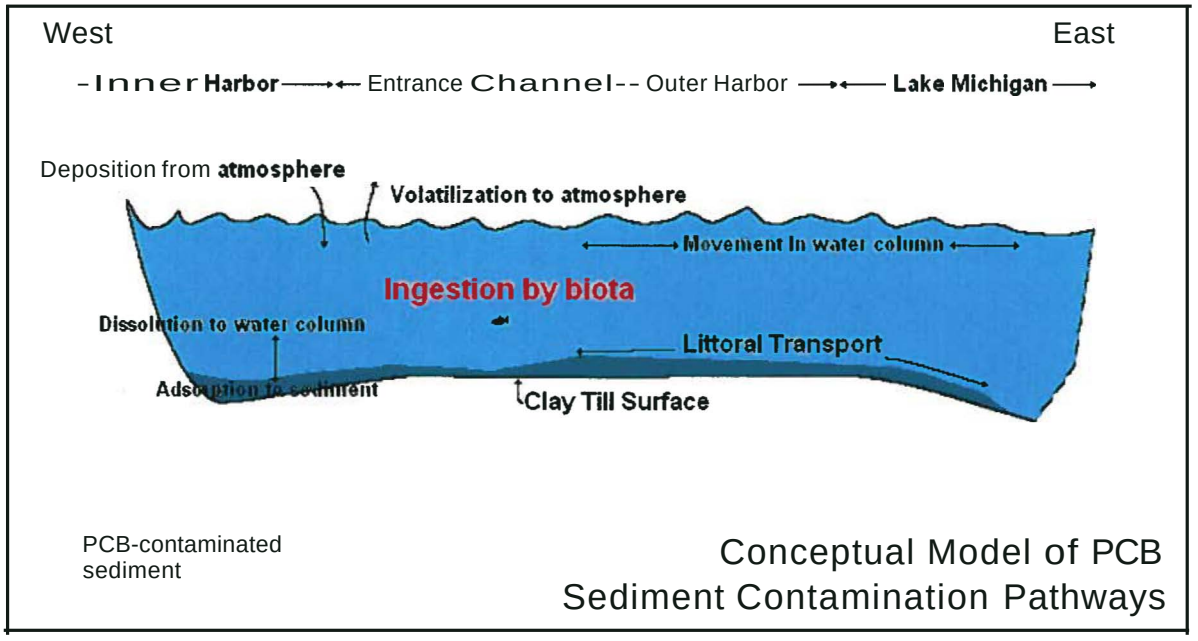


Figure 9: Conceptual site diagram for Waukegan Harbor

F. Current and Potential Future Land and Resource Uses

Waukegan Harbor serves both recreational boaters and commercial and industrial shippers. Much of the harbor is a federally authorized channel maintained by USACE to serve the industrial shippers. The remainder serves recreational boaters. Waukegan Harbor is also the only designated port of refuge on the western Lake Michigan shore between Chicago and Milwaukee. Most of the industrial commerce in the harbor is the receipt of gypsum and cement at Boat Slip #1 by companies who manufacture wallboard and concrete in facilities located at the harbor. Recreational boaters are able to moor at Larsen Marine Service at Boat Slip #4 and at the Waukegan Port District facility in the southwest corner of the harbor, among other locations.

The land adjacent to the harbor at the OMC Plant 2 site (OU #4) is currently zoned commercial-industrial and other commercial-industrial properties surround the harbor. However, the land on which the Waukegan Coke Plant site (OU #2) is located has already been rezoned by the City of Waukegan to high-density residential property in anticipation of redevelopment of this site. With its location next to Lake Michigan and Waukegan Harbor, U.S. EPA anticipates that the City might also rezone OMC Plant 2 site to high-density residential consistent with the City's lakefront redevelopment plans. The City has published its Master Plan for redevelopment on its website and officials have stated that in another 15-20 years perhaps "8000-10,000 people" will be living on the lakefront where no residences are located now.

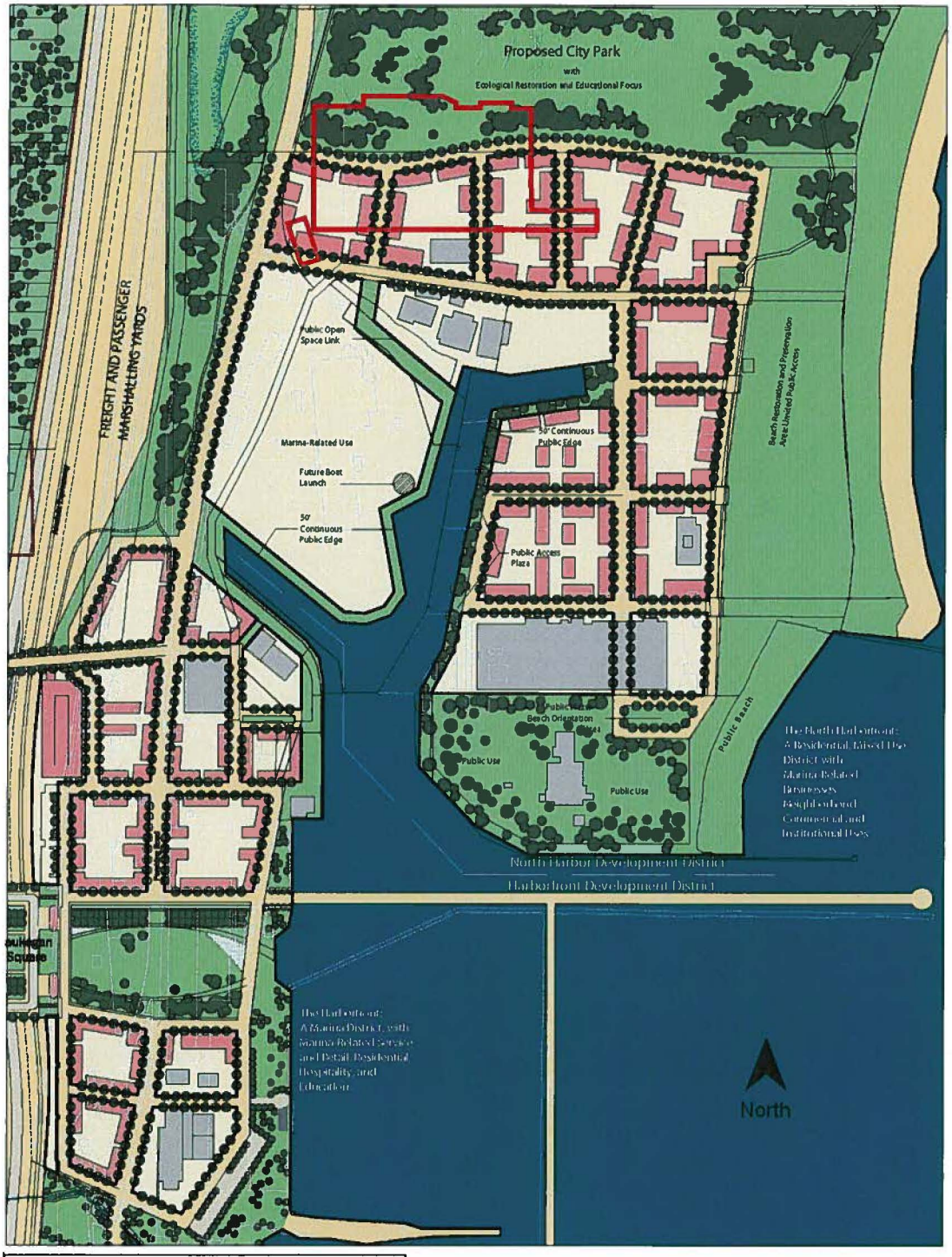
The City has indicated that it believes the future of the harbor itself is better suited for recreational and perhaps light commercial or fishing use only. Its Master Plan envisions that the harbor industries will be relocated away from the lakefront and that widespread redevelopment in the form of condominiums and small shops may take place (see Figure 10). The industries, however, report that they have very long term leases of the properties that their facilities are sited on which would allow them to continue to use the harbor for industrial shipments. The industries have indicated that they rely on the presence of the federal channel for their business operations.

Others with interests in the harbor include the National Oceanic and Atmospheric Administration (NOAA), a division of the U.S. Department of Commerce, and the Lake County Board. NOAA is the federal natural resource trustee for the harbor and is charged with the protection and restoration of the nation's natural resources including both commercial and environmental concerns. NOAA considers the harbor to have commercial value. The Lake County Board has also recognized Waukegan Harbor's value as a commercial harbor and a port of refuge.

The bulk of the comments addressed in the attached Responsiveness Summary concern the future use of the harbor itself and the land surrounding the harbor, as well as whether it should remain an industrial harbor or become a recreational harbor only.

G. **Summary of Site Risks**

U.S. EPA had determined in the 1984 ROD that PCBs were the primary contaminants of concern in harbor sediment. The State had monitored PCB levels in harbor-caught fish following the 1990-1992 cleanup action and U.S. EPA used these sampling results to assess the effectiveness of the harbor cleanup in the Second OMC FYRR (September 2002). Based on the PCB levels noted in harbor-caught fish, U.S. EPA determined in the Second OMC FYRR that the 50 ppm PCB cleanup level in the harbor sediment was likely not protective and the Agency recommended that a study be done to determine a protective cleanup level for PCBs in harbor sediment. Accordingly, in 2003 and 2005 U.S. EPA documented the extent of PCB contamination in harbor sediment.



Legend

OMC Plant 2 BUilding Outline

Feet

0 500 1000

Figure 10

Waukegan's Master Plan for Harborfront and North Harbor Development Districts

Source: Waukegan Lakefront-Downtown Master Plan/Urban Design Plan (Skidmore. Owings & Merrill LLP, June 23.2003)

OMC Site Vicinity

In July 2006 and October 2008, U.S. EPA re-evaluated the potential health risks associated with the Waukegan Harbor site based on newly-documented PCB levels in harbor sediment and current PCB levels in fish tissue samples. The Agency evaluated site risks based only on consumption of harbor-caught fish because the sediments are below 18 feet of water and human dermal contact and sediment ingestion hazards are not significant exposure pathways. PCBs have low water solubility; so dermal contact with and ingestion of harbor water are not significant human exposure pathways as well. Despite its low solubility in water, however, PCBs have biomagnification factors in the million-fold range[2] so that very small amounts of PCBs in sediment can yield very high PCB levels in fish.

PCBs are a potential carcinogen and also pose non-cancer-causing health effects. Generally, PCBs have carcinogenic effects on the whole body but especially target the liver and brain. In addition, non-carcinogenic health effects include thyroid problems, immune deficiencies, and cognitive or developmental effects. Young children are especially sensitive to PCBs and effects are notably higher in children than in adults.

Risk Assessment Assumptions

People have been observed fishing in the harbor and reportedly eat their catch. Therefore, the risk assessment calculated risks based on consumption of harbor-caught fish (including "resident" fish such as rock bass and blue gill and "frequent visitors" such as carp and yellow perch) using certain assumptions for a "high-end consumer" (subsistence fisherman) and a "recreational angler." The difference between the two is that the Agency assumed the high-end consumer is eating some of the bottom feeders including carp, as well as the sport fish (rock bass) they catch. The Agency assumed that the recreational angler is eating only sport fish. For the high-end consumer, U.S. EPA assumed a diet of 25 percent bottom feeders and 75 percent sport fish.

Other assumptions were that each of the consumer types eat 95 fish meals per year (equivalent to 59 grams/day), half of which come from the harbor (the remainder from other sources), and that there would be a 50 percent reduction in available PCBs due to cleaning and cooking the harbor-caught fish. Also, it was assumed that the fish get their entire PCB burden from the harbor.

Calculated Risk Values

The Region conducted a risk evaluation to develop the cleanup level for PCBs in the harbor sediment. Analytical results from sediment samples were used to establish an empirical relationship between the concentrations of PCBs in sediment and fish tissue (organic carbon and lipid normalized in accordance with standard risk assessment procedures) and to calculate cleanup levels corresponding to various fish consumption rates. The evaluation first calculated a risk-based concentration (RBC_{fish}) of PCBs for fish tissue - corresponding fish tissue PCB levels to target risk levels for individuals that

2 The million-fold biomagnification factor is generally arrived at by assuming PCB dissolution from sediment into water and then uptake by fish from the water via the gills.

consume the fish. Again, high-end consumers (subsistence fishermen) were assumed to have a fish diet of 25 percent bottomfish and 75 percent gameflSh, whereas a recreational angler was assumed to have a fish diet of 100 percent gamefish. Both cancer and non-cancer endpoints were calculated. Next, an estimation of a biota sediment accumulation factor (BSAF) was calculated. The BSAF is the ratio of contaminant concentration in tissue to the concentration in sediment. A proportional relationship (or first-order) between the concentrations in tissue and sediment is assumed in the calculations. Lastly, a sediment RBC is calculated for each type of consumer using the RBCfish and the BSAF. Uncertainty factors included assumptions that the fish get their entire PCB burden from the harbor and that the recreational anglers and high-end consumers eat a certain number of fish meals per week, as well as certain other technical factors listed in the risk evaluation document.

Using the most current fish sample PCB levels, an adult recreational angler is calculated to have a 5.6 x 10^{-5} excess lifetime cancer risk (ELCR) and a hazard index (HI) quotient of 3.2. Risk assessment methodology used at other PCB sediment sites in the Region suggest that children and infants are 2.5 times more susceptible to toxic effects of PCBs than adults. Therefore, the HI quotient would be about 8.0 for children that eat harbor-caught fish under the diet assumptions for recreational anglers. Using the most current fish sample PCB levels, an adult high-end consumer is calculated to have a 2 x $\mathbf{10^{-4}}$ excess lifetime cancer risk (ELCR) and a hazard index (HI) quotient of 11.4. The HI quotient for children would be about 28.5. The risk values are summarized in Table 2.

Table 2: Calculated Risk Values for Receptors

Receptor	ELCR - Adult	HI- Adult	HI - Child
Recreational **Angler**	5.6 x $\mathbf{10^{-5}}$	3.2	8.0
High-end consumer	2 x 10^{-4}	11.4	28.5

Note: Values in bold exceed target risk goals.

Evaluation of Calculated Risks

At 5.6 x 10^{-5}, the calculated ELCR for recreational anglers does not exceed U.S. EPA's target ELCR range of less than 1 in 10,000. However, at 2 x $\mathbf{10^{-4}}$, the calculated ECLR for the high-end consumer does fall just outside of the target risk range. Even so, these ECLR values indicate that PCB carcinogenicity is not a major driving force behind a potential harbor cleanup action.

The HI quotient for the recreational angler is 3.2 (8 for children and infants) and for the high-end consumer it is 11.4 (28.5 for children and infants). These HI values exceed U.S. EPA's target HI value of 1.0 by up to an order of magnitude (factor of ten). The high HI values indicate that remedial action is necessary to address the residual PCBs in harbor sediment so that PCB levels in resident, harbor-caught fish would fall to a protective level for those who consume the fish.

Uncertainties

Calculated ELCRs and HI values are estimates of potential upper-bound risks that are useful in regulatory decision-making. However, it is improper to consider the risk estimates to be representative of actual risk to potentially exposed individuals because the risks were estimated by making numerous conservative assumptions (that is, assumptions that over-estimate potential exposure levels and thus, potential risk) due to uncertainties inherent in the HHRA process. For example, some exposure and toxicity value assumptions have greater amounts of scientific data supporting them than others (that is, a widely-used chemical may be well-studied whereas a newer compound may not yet have any testing data associated with it). Uncertainty is also introduced into the risk assessment process every time an exposure assumption is made based on current or potential site uses.

One example of uncertainty at the Waukegan Harbor operable unit is related to the types of fish that are consumed. U.S. EPA assumed that high-end consumers (subsistence fishermen) would have a diet of 25 percent bottomfish and 75 percent gamefish, whereas a recreational angler was assumed to have a diet of 100 percent gamefish. The actual rates may vary from person to person. U.S. EPA also assumed, based on risk assessment methodology used at other PCB sediment sites in the region, that children and infants are 2.5 times more susceptible to toxic effects of PCBs than adults. Therefore, the calculated risk values for children could be biased high.

Ecological Risk Discussion

Much of Waukegan Harbor has a reduced value as habitat due to regular industrial boat traffic that stirs up and muddies the harbor waters, depth-maintenance dredging operations that disturb harbor sediments and affect surface water quality, and the lack of cover provided by the deep, vertical harbor walls. U.S. EPA had completed a sediment toxicity study for the harbor in 1999, which represented post-cleanup conditions. The results of the study are generally applicable to current conditions as additional dredging activities have not been conducted and PCBs do not appreciably degrade or easily attenuate. Sediment samples from Waukegan Harbor were generally found to be not lethal to amphipods-only 6 of the 20 sediment samples were toxic. However, amphipod growth was significantly reduced in all of the sediment samples compared to the control sediment after both 28 and 42 day time periods. The available guidelines during the study for evaluation of harbor sediment classified sediment samples as moderately toxic if total PCB concentrations range from 1 to 10 ppm. Based on the criteria, 18 of 19 sediment samples used in this study would be classified as moderately toxic based on their total PCB concentrations.

Basis for Taking Action

U.S. EPA has determined that if left unaddressed, the PCB levels in Waukegan Harbor sediment present unacceptable risks to future human receptors based on the Agency's human health risk assessment results. Thus, the response actions selected in this ROD

are necessary to protect public health or welfare from actual or threatened releases of hazardous substances, pollutants, or contaminants from the site that may present an imminent or substantial endangerment to public health or welfare.

PCB Cleanup Level

Based on the calculated risk values, U.S. EPA recommends that the PCB levels in the harbor sediment, currently at about 1.8 ppm [surface-weighted average concentration (SWAC)], be reduced by a factor of ten - to 0.2 ppm (SWAC) to be protective. U.S. EPA has determined that a ten-fold reduction in the average PCB concentration in harbor sediment should ultimately lead to a ten-fold reduction of PCB levels in resident, harbor-caught fish, thereby reducing estimated risks to consumers eating these fish by ten-fold, which would be protective of human health. The PCB levels in resident, harbor fish are expected to approach those seen in yellow perch which are found in near shore waters of Lake Michigan. PCB levels in near-shore sediments average under 0.02 ppm or approximately one hundred times lower than those currently found in Waukegan Harbor. Frequent visitors to the harbor, such as carp and yellow perch, would also be expected to have PCB reductions following cleanup, lowering risks to fish consumers, but not to the extent projected for resident harbor species.

U.S. EPA notes that to protect the children of high-end consumers, the PCB levels in Waukegan Harbor sediment would theoretically need to be reduced to as low as 0.06 ppm (SWAC). However, because there are some uncertainties in the assumptions that a reduction in PCB levels in harbor sediment will show a linear decline in PCB levels in harbor-caught fish, this cleanup goal is not practicable. Given the current low PCB levels in the sediment, U.S. EPA may not see as dramatic of a decline in resident, harbor-caught fish PCB levels as was seen after the first harbor cleanup was conducted. The Agency is also pushing the limits of cleanup technology (as well as laboratory analytical capabilities) in attempting to set a cleanup goal of 0.2 ppm PCB (SWAC) and thus a goal of 0.06 ppm PCB (SWAC) is perhaps not attainable at present time.

H. Remedial Action Objectives

U.S. EPA's long-term remedial action objective for the Waukegan Harbor site is to isolate or reduce the concentrations of PCBs in harbor sediment so that PCB concentrations in resident, harbor-caught fish will decline and ideally meet protective levels[3]. Over the short term, steps should be taken (maintain fish-consumption advisories) to prevent the over-consumption of PCB-impacted fish until protective levels are reached. This means that once the Agency completes the cleanup action, and after PCB levels in resident, harbor-caught fish begin to fall, adults and most children who

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3 U.S. EPA assumed a diet of sport fish and bottom feeders for the high-end consumer and the 2001-2005 fish PCB levels data set showed a weighted average fish PCB level of 1.08 ppm. For recreational consumers, a diet of only sport fish was assumed; the weighted average was 0.30 ppm PCBs. The target ten-fold reduction in fish PCB levels is thus to a range of 0.03-0.10 ppm PCBs (in fillets) for resident fish, which would be the "protective levels" referred to in the text.

consume these fish under the exposure assumptions given above would be exposed to PCBs at levels that would not cause their estimated ELCRs to exceed 1 in 10,000 or their calculated HI quotients to exceed 1. People consuming frequent visitor fish (such as carp) will be expected to have reduced health risks but perhaps not to the same extent as for resident fish.

I. Description of Alternatives

U.S. EPA fully evaluated site cleanup alternatives in the FS in order to reduce or eliminate the actual or potential risks to human health. The Agency evaluated the clean-up methods by comparing them to the Nine Criteria as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 C.F.R. § 300.435 (e)(9) (see Section J, below).

U.S. EPA also evaluated several other cleanup alternatives and then screened them out because they were not protective or did not go far enough to yield desired results. One such alternative consisted of the removal of only "hot spots" by dredging and the other was the use of monitored natural attenuation (MNA).

U.S. EPA did not retain MNA for further consideration as part of the remedial alternatives for Waukegan Harbor for several reasons. First, the harbor is a closed system (no river-fed water source) and due to documented shoaling rates and our assumption that propeller wash from large cargo ships results in near complete mixing of sediments in the federal navigational channel segments, the Agency estimated it would take over 100 years before sufficient (clean) sediment would be deposited in the harbor to meet the cleanup goal of 0.2 ppm PCBs (SWAC). This time period is unacceptably high.

Second, the Agency assumed that natural PCB degradation would not occur at a measurable rate or within a reasonable time period because the current range of PCB concentrations in harbor sediment is below 50 ppm. Below this level the rate of PCB dechlorination is often very slow. In addition, PCBs strongly adsorb to soil/sediment particles and have low water solubility; thus, they are persistent in the environment (do not readily break down), and would not exhibit much potential for migration.

Hot spots may be thought of as being those areas where sediment is at 10 ppm PCBs or above. The removal of these sediments, totaling about 9000 yd^3, would still leave the harbor with a 1 ppm or more PCB SWAC, which is above the target cleanup level of 0.2 ppm PCB SWAC. Further, after evaluating the shoaling rates for the inner harbor areas and taking into consideration that PCBs do not easily biodegrade, U.S. EPA concluded that it would take 80-100 years for the PCB concentrations in the remaining sediment to fall to the target cleanup level. This time period is unacceptably high. In addition, neither approach would address the BUIs identified for the Waukegan Harbor AOC.

Presented below are brief descriptions of the remedial alternatives that U.S. EPA fully evaluated in the FS Report. A more thorough description of the selected remedy is presented in Section L, below.

Alternative D1: No Action
Alternative D2: Environmental Dredging with Residual Sand Cover
Alternative D3: Dredging with Capping only in North Harbor
Alternative D4: Partial Dredging and Capping
Alternative D5: Cap Entire Harbor

Alternative D1: No Action

U.S. EPA policy requires that the No Action alternative be presented for comparison purposes only. Under this alternative, the Agency would take no clean-up action to remove or contain the PCB-impacted sediment in Waukegan Harbor. Thus, fish-consumption advisories would remain for the harbor and the State would continue to monitor PCB levels in harbor-caught fish. Based on estimated shoaling rates, PCB levels in the sediment will exceed the target cleanup goal for up to 100 years. Estimated cost is $0.

Alternative D2: Environmental Dredging with Residual Sand Cover

Under Alternative D2, U.S. EPA would hydraulically dredge the harbor to remove PCB-contaminated sediment wherever it exceeds 1 ppm. The sediment would be pumped to the OMC Plant 2 site and dewatered and the water derived from the dredged sediment would be filtered and then discharged back to the harbor. The dredged sediment would be consolidated on the OMC Plant 2 property and covered with a clean soil layer. After dredging was completed a thin, clean sand layer would be placed in the harbor to allow for mixing with remaining sediment to achieve the final PCB cleanup goal. Sediment located very near to the sidewalls of the harbor cannot be removed so it would be capped with armored materials. After U.S. EPA completes the design stage and when funding is available, construction activity for Alternative 2 could be completed in about 12 months. The Agency estimates that PCB levels in resident, harbor-caught fish will begin to fall about 5 years after completion of the dredging. The estimated cost to implement this option, $34,900,000, includes periodic monitoring and maintenance expenses related to the soil cover on top of the dewatered sediment and sampling to demonstrate that PCB levels in fish are falling. The State's fish consumption advisories would remain as an institutional control (IC) until protective levels are met.

Alternative D3: Environmental Dredging with Sand Cover; Cap Northern Harbor

Under Alternative 3, the harbor would be hydraulically dredged as described in Alternative 2, above, except for the northern harbor extension and Slip #4. Instead of dredging in the northern harbor, a 2-3 foot sand and gravel cap would be laid down over the PCB-impacted sediment in these areas to create a barrier between the PCBs and bottom feeder biota. Institutional controls would be placed on the capped area so that future uses of the harbor would not interfere with the cap. After U.S. EPA completes the design stage and when funding is available, construction activity for Alternative 3 could be completed in about 12 months. U.S. EPA estimates that PCB levels in resident, harbor-caught fish will begin to fall 5 years after completion of the dredging and

capping. The estimated cost to implement this option, $33,000,000, includes periodic monitoring and expenses related to five-year reviews at the site. The State's fish consumption advisories would remain as an institutional control (IC) until protective levels are met.

Alternative 04: **Environmental Dredging with Capping**

Under Alternative 4, some of the harbor would be hydraulically dredged as described in Alternative 2, above, in areas that exceed the 1 ppm cleanup level. Afterwards, an armored cap would be placed into the federal channel to isolate any remaining PCB-impacted sediment. The current depths would thus not be affected after the cleanup was completed; however, placement of the armored cap would tend to disallow any future dredging activities of any kind including maintenance dredging, as well as dredging to increase harbor depths. Institutional controls would be placed on the capped area so that future uses of the harbor would not interfere with the cap. After U.S. EPA completes the design stage and when funding is available, construction activity for Alternative 4 could be completed in about 12 months. U.S. EPA estimates that PCB levels in resident, harbor-caught fish will begin to fall 5 years after completion of the dredging. The estimated cost, $24,400,000, includes periodic monitoring and expenses related to five-year reviews at the site. The State's fish consumption advisories would remain as an institutional control (IC) until protective levels are met.

Alternative 05: **Cap Entire Harbor**

Under Alternative 5, nearly the entire harbor would be covered with a 3 to 5-foot sand and gravel cap or an armored cap to isolate the PCB-impacted sediment. The current depths would thus not be maintained. Institutional controls would be placed on the capped area so that future uses of the harbor would not interfere with the cap. After U.S. EPA completes the design stage and when funding is available, construction activity for Alternative 5 could be completed in about 12 months. U.S. EPA estimates that PCB levels in resident, harbor-caught fish will begin to fall 5 years after completion of the cap. The estimated cost, $9,600,000, includes periodic monitoring and expenses related to five-year reviews at the site. The State's fish consumption advisories would remain as an institutional control (Ie) until protective levels are met.

J. Summary of Comparative Analysis of Alternatives

U.S. EPA evaluated the proposed alternatives using the Nine Criteria outlined in 40 C.F.R. § 300.430(e)(9):

Overall protection of human health and the environment - *This criterion addresses whether* a *remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or control/ed through treatment, engineering controls, or institutional controls.*

All of the alternatives, except for the no-action alternative, are protective of human health and the environment because they would eliminate, reduce, or control actual or potential health risks through a combination of the use of engineering controls and institutional controls. U.S. EPA estimates that PCB levels in resident, harbor-caught fish will begin to fall 5 years after completion of Alternatives 02, 03, 04 or 05. It would take 100 years or more for PCB levels to fall in these fish under the No Action alternative.

Compliance with ARARs (Applicable or Relevant and Appropriate Requirements) - *This criterion addresses whether* a *remedy will meet all applicable or relevant and appropriate requirements of federal and state environmental laws or provides* a *basis for invoking* a *waiver of any of the requirements.*

Table 5 (see page 41) lists identified ARARs for the site. Noteworthy ARARs include the federal Clean Water Act's NPOES permit program (which the State of Illinois has been authorized to implement) and Part 35 of the Illinois Administrative Code (IAC) at Section 302, which designates surface water quality standards used in setting effluent limits for discharges to surface water. All of the remedial alternatives will comply with the substantive requirements of each ARAR listed in Table 5, or will meet the statutory basis for a technical impracticability waiver outlined in CERCLA Section 121(d)(4)(C). For the dredging alternatives, the discharge limits to surface water outlined in 35 IAC Section 302 will either be met through the attainment of those standards using engineering controls or, in the case of mercury, U.S. EPA will issue a Technical Impracticability (TI) waiver from the standard as discussed below.

Ammonia Nitrogen - 35 IAC 302.535

The dredging alternatives would require U.S. EPA to use engineering controls to attain the state water quality standard for ammonia (35 IAC 302.535 (Ammonia Nitrogen» - set for discharge of water to the Lake Michigan Basin - to allow for the in-harbor discharge of water derived from the dredged sediment ("dredge water").

Ammonia is given off when naturally occurring organic material found in the sediment decays. Hydraulic dredging will remove a slurry of sediment and lake water from the harbor bottom and the process will impart the naturally occurring ammonia into the water. The slurry will be pumped to the OMC Plant 2 site to be dewatered, which will yield about 2,500 gallons per minute (gpm) of dredge water to be discharged back into the harbor. Untreated, the dredge water will likely contain ammonia levels that would exceed the ammonia discharge standard under 35 IAC 302.535. As discussed in the Feasibility Study (at page 3-13), U.S. EPA has concluded that there is no practicable treatment technology that will cost-effectively treat this very large volume of dredge water to remove enough of the ammonia from the water to meet the discharge standard. Instead, the dredge water would be filtered to remove solid particles and then discharged into the harbor waters through a diffuser and similar engineering controls. The discharge equipment will be designed to allow the dredge water to discharge into the harbor waters so that the ammonia levels in the water leaving the pipes will not

exceed the (temperature and pH-based) acute ambient water quality criterion for ammonia. Moreover, measurements will be taken at a point 500 feet from the discharge pipes to demonstrate that the (temperature and pH-based) chronic ambient water quality criterion for ammonia will not be exceeded at the measurement point.

Mercury - 35 IAC 302.504

Mercury occurs in the harbor sediment and is derived from other sources not related to OMC's past discharges of PCBs into former Boat Slip #3. U.S. EPA took several samples of harbor water and measured mercury at a range of 1.4 nanograms per liter (ng/L or parts per trillion (ppt» to 17 ng/L, which exceeds the state discharge standard of 1.3 ng/L (35 IAC 302.504 (Chemical Constituents - includes mercury) set by the State for discharge of water to the Lake Michigan Basin. U.S. EPA will filter the dredge water before discharge via diffusion into the harbor and this action will yield mercury levels in the filtered water of 10 ng/L or less. However, as discussed in the Feasibility Study (at pages 4-5 and 4-6), as well as in the technical memorandum prepared by CH2M Hill in October 2009, the Agency has determined that there are no reliable and practicable treatment technologies available that would be capable of treating mercury to meet the State of Illinois mercury discharge limit of 1.3 ng/L. Therefore, U.S. EPA has determined that a technical impracticability waiver of the mercury discharge standard would apply. Note: all of the dredging alternatives would require a technical impracticability waiver of the state water quality standard for mercury set for discharge of water to the Lake Michigan Basin to allow for the in-harbor discharge of water derived from the dredged sediment.

Long-term effectiveness and permanence - *This criterion refers to the ability of* a *remedy to maintain reliable protection of human health and the environment over time after clean-up goals have been met.*

Alternatives 01 (No Action) does not provide long-term protection because it would not actively reduce or isolate the PCBs in the sediment. Alternative 02 is the most reliable over the long term because it would remove the largest mass of impacted sediment from the underwater environment in the harbor. The other active remedies provide for a lesser level of long term protectiveness because they leave some or all impacted sediment in place under a cap.

Reduction of toxicity, mobility, or volume - *This criterion refers to the anticipated performance of the treatment technologies that* a *remedy may employ with respect to principal threat wastes at* a *site.*

The use of treatment to reduce toxicity, mobility, or volume of contamination at the site does not apply to any of the alternatives because U.S. EPA does not consider the harbor sediment to be a principal threat waste (see also Section K).

Short-term effectiveness - *This criterion evaluates the period of time needed to achieve protection and any adverse impacts on human health and environment that may be*

posed during construction and implementation of a *clean-up action.*

All of the alternatives could have negative short-term effects on harbor biota. Dredging activity would cause re-suspension of fine-grained sediment, which could cause fish to take in the sediment through the gills. The sediment may contain low levels of PCBs, which could temporarily increase PCB uptake rates in the fish. Dredging will also release ammonia and other potentially toxic compounds into the water column, both by the dredging action itself and the discharge of dredge water back into the harbor. Capping activity would cause fine-grained materials to be dropped through the water column, causing intake of material through the gills to increase until settlement occurs. These effects are all projected to be temporary.

All of the dredging or capping alternatives involve some degree of short-term exposure by workers to construction hazards during cleanup. Temporary engineering controls such as air monitoring, protective clothing, and following health and safety protocols would be used to reduce potential exposures or risks. Each active alternative achieves protectiveness in generally the same amount of time - about 12 months.

The no-action alternative would not have short-term effects.

Implementabilitv - *This criterion refers to the technical and administrative feasibility of* a *remedy, including availability of goods and services needed to carry out the chosen option.*

The federal Water Resources Development Act (WRDA), while not an ARAR, presents a significant legal impediment to conducting remedies that require capping in the navigation channel (Alternatives D4 and D5). Placing a cap in the federally authorized channel as required by Alternative D5 would interfere with the federally authorized navigation depth established by Congress. Therefore, the congressional authorization of the harbor as a federal navigation channel would preclude implementation of Alternative D5, as that remedy would raise the depth of the harbor above the federally authorized level. In addition, the Agency is aware that the USACE would not issue a permit to cap any portion of the navigation channel. Both Alternatives D4 and D5 would require some capping in the navigation channel. While the cap required by Alternative D4 would not interfere with the current navigation depth, if lake levels continue to fluctuate as they have in the past few years, the USACE might have difficulty maintaining the 18-foot navigation depth if the cap required by Alternative D4 is in place. In addition, future deepening of the harbor, as has been congressionally proposed in the past, could not be implemented. Alternative D5 would not be permitted by the USACE because it interferes with the current navigation depth. Although CERCLA provides that U.S. EPA does not need to obtain a permit to conduct remedial work completed on a Superfund site [CERCLA § 121(e)], and the harbor is part of the OMC Superfund site, U.S. EPA still must meet the substantive requirements of any such permit that would otherwise be required to conduct the work. Since the USACE would not issue a permit to fill in any portion of the navigation channel above the authorized depth, there are no substantive requirements that U.S. EPA could meet in order to satisfy this requirement.

From a technical perspective, all of the alternatives are easily implemented. Goods and services are readily available to implement the action alternatives.

Cost - *This criterion evaluates the estimated capital and operation and maintenance costs and estimated present-worth costs of each proposed alternative.*

The no-action alternatives cost nothing to implement. The estimated present worth cost for the action alternatives ranges from $9.6 million to $34.9 million.

State agency acceptance - *This criterion evaluates whether a support agency, based on comments submitted after its review of the Proposed Plan, concurs, opposes, or has no comment on the preferred alternative.*

Illinois EPA has indicated that it supports Alternative D2, Environmental Dredging with Residual Sand Cover, and supports the technical impracticability waiver for mercury. (See the State's concurrence letter for details.)

Community acceptance - *This criterion refers to the assessment of public comments received on the Proposed Plan.*

The community expressed support for taking action to address the PCBs in the harbor sediment (see the Responsiveness Summary beginning on Page 50). Most of the comments expressed support for Alternative D2 (Environmental Dredging) and a few favored Alternative D5 (Capping).

Table 3 (next page) summarizes the evaluation of clean-up alternatives for the Waukegan Harbor site with regard to the Nine Criteria.

Proposed Plan

u.S. EPA's proposed plan for the Waukegan Harbor site presented Alternative D2 (Environmental Dredging with Residual Sand Cover) as the preferred alternative for the harbor.

K. Principal Threat Wastes

The NCP establishes an expectation that U.S. EPA will use treatment technology to address the principal threat wastes at a site wherever practicable *(See* 40 CFR 300.430(a)(1)(iii)(A)). Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant to human health or the environment should exposure occur. Remedies that involve treatment of principal threat wastes likely will satisfy the statutory preference for treatment as a principal element.

u.S. EPA does not consider the PCB-impacted sediment to be a principal threat waste because it is not highly toxic and can be reliably contained.

L. Selected Remedy

U.S. EPA selects **Alternative 02 - Environmental Dredging** to clean up the Waukegan Harbor site.

Rationale for Selection

The selection of a remedy is accomplished through the evaluation of the nine criteria as specified in the NCP. A remedy selected for a site will be protective of human health and the environment, comply with ARARs (or justify a waiver) and offer the best balance of tradeoffs with respect to the balancing and modifying criteria in the NCP. Through the analyses conducted for the RifFS, U.S. EPA has determined that there is an unacceptable risk to human health and the environment from the consumption of fish from Waukegan Harbor. It has also been determined that the unacceptable risk will continue for many decades without further remediation of the PCB-contaminated sediments. Accordingly, the No Action alternative is not protective of human health and the environment and therefore could not be selected for the Site.

U.S. EPA did not select Alternative D1 - No Action - because it is not protective of human health and the environment. The rest of the alternatives, however, are protective of human health because they take action to either remove or isolate the PCBs in the sediment from the harbor environment where the PCBs are now bioaccumulating in fish that reside in the harbor. Placing a cap in the federal navigation channel would not be permitted by the USACE and, therefore, Alternative D4 - Partial Dredging and Capping - and Alternative D5 - Cap Entire Harbor - are not preferred remedies. Of the remaining alternatives, Alternative D2 - Environmental Dredging - is slightly more expensive than Alternative D3 - Dredging plus Cap Northern Harbor - at $34.9 million to $33 million. However, the cost difference is within the margin of error for cost estimates conducted in the feasibility study; which means these remedies cost essentially the same to conduct. Alternative D2 permanently removes more PCB-impacted sediment from the harbor than Alternative D3; therefore, Alternative D2 is the preferred remedy.

U.S. EPA considered the current and potential future uses of Waukegan Harbor itself in selecting Alternative D2 as the cleanup remedy for the site. The current use of the harbor is mixed recreational and commercial/industrial due to the federal navigational channel. The City of Waukegan has stated that it believes that the harbor will solely be a recreational harbor in the future based on its desire as expressed in its Master Plan to change the nature of the land use surrounding the Harbor to residential and light commercial. Thus, the City stated that Alternative D5 - Cap Entire Harbor - is the cost-effective and preferred approach. However, U.S. EPA believes that the harbor's designation as a federal navigation channel presents a significant barrier to implementing any remedy that reduces the federally authorized depth of the channel. Therefore, capping the entire channel, while less expensive than the selected

Table 3: Evaluation of remedial alternatives using the Nine Criteria

Criterion	No Action Alternative 01	Environmental Dredging 02	Environmental Dredging, Cap Northern Harbor 03	Partial Dredging, Cap Harbor 04	Cap Entire Harbor 05
Protection of human health and the environment	Not Protective	Is Protective	Is Protective	Is Protective	Is Protective
MeetsARARs	No	Meets* ARARs	Meets* ARARs	Meets* ARARs	MeetsARARs
Long term effectiveness	Not effective	Effective	Effective	Effective	Effective
Reduction of toxicity, mobility, or volume	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Short-term effectiveness	No construction	12 months to complete	12 months to complete	12 months to complete	12 months to complete
Implementability	Easily implemented	Easily implemented	Easily implemented	Legally difficult to implement; technically easy to implement	Legally difficult to implement; technically easy to implement
Cost	None	$34.9 million	$33 million	$24.4 million	$9.6 million
State acceptance	No	Yes - preferred approach	Yes	No	No
Public acceptance	No	Yes - preferred approach	No	No	Some preferred this approach

*or meets the requirement in CERCLA Section 121(d)(4)(D) for waiving an ARAR

Alternative D2, would be difficult to implement legally. In addition, selecting a remedy that maintains the federally authorized navigation depth is not an impediment to the City's expressed desire to redevelop the land adjacent to the harbor. Moreover, NOAA, the federal natural resources trustee, supports Alternative D2 which allows for the future commercial/industrial use of the harbor. Unless and until the federal channel is deauthorized by Congress, Alternative D5 is not a viable cleanup alternative.

Implementation of the selected remedy will greatly reduce the mass of PCBs in the sediments and lower the average PCB concentration in surface sediments, which in turn will reduce PCB levels in the water column and fish and other biota, thereby reducing the level of risk to human and ecological receptors. Alternative D2 permanently removes the most mass of PCBs from Waukegan Harbor of the alternatives considered. In addition, Alternative D2 is more reliable because it does not require long-term maintenance and monitoring of the capped harbor sediment. The selected remedy is administratively feasible, unlike the Alternatives that include capping, and is therefore implementable.

Description of the Selected Remedy

Alternative 02 - Environmental Dredging with Residual Sand Cover

Under Alternative D2, U.S. EPA will mobilize a hydraulic dredge unit to the harbor to remove almost all sediment that contains 1 ppm PCBs or more. Sediment next to the steel sheet-pile walls of the harbor that cannot be easily removed will be capped in place. The cap will not interfere with navigation in the channel or the future maintenance dredging of the harbor. Dredged sediment will be pumped to the OMC Plant 2 site where a containment area will be constructed on and between the West and East Containment Cells. Here the sediment will be dewatered and the water will be pumped through a filtration unit to remove solids before it is discharged back into the harbor using diffusers and other engineering controls. The dewatered sediment will remain on the OMC Plant 2 site, and, when dredging is complete, U.S. EPA will place a 2-3 foot soil cover over the mound so that the surface may be used in accordance with Waukegan's published Master Plan (as an "ecological park").

After the dredging step is completed, U.S. EPA will place a thin layer of clean sand in the harbor to serve as a mixing layer for remaining sediment. The mixing layer will dilute remaining sediment to help achieve the final target of 0.2 ppm PCB (SWAC) in the harbor. The Agency will sample the sediment prior to placement of the mixing layer to determine if the mixing layer was even needed; also, sampling will be conducted after the mixing layer was laid down to determine if it was effective at reaching the target 0.2 ppm PCB (SWAC) cleanup goal.

The State will continue to monitor PCB levels in harbor-caught fish so that the effects of the cleanup may be demonstrated. U.S. EPA will work with federal, state, and local officials to place institutional controls such as deed notices or restrictive covenants on adjacent properties so that the cap along the face of the sheet pile walls does not get

disturbed by future maintenance dredging or by shipping interests in the harbor.

Fish consumption advisories are another form of ICs and the State has already issued them on the harbor. U.S. EPA will work with Illinois EPA to ensure that the advisories are posted at the site, in English and Spanish, so that area fishermen may be adequately warned about the potential health effects of eating their catch.

Cost Estimate for the Selected Remedy

Alternative 02 is estimated to cost $34,850,000. The major cost elements of the selected remedy are shown in Table 4 (below).

Table 4: Major cost elements of Alternative 02

Capital Cost Items	Estimated Costs*
Preconstruction Items (fencing, etc.)	$ 125,000
Temporary Facilities	550,000
Install Consolidation Cell	3,475,000
Water Treatment Plant	4,350,000
Dewatering	4,125,000
Sediment Removal	5,550,000
Marina Removal	800,000
Place Residual Sand Layer	2,700,000
Transport/Disposal of Wastes	75,000
Surface Restore/Seeding	25,000
Reconfigure Cell Treatment System	100,000
Demobilize	275,000
Subtotal:	$ 22,150,000
Payment Bond, Insurance (4%); Contractor G&A (12.7%); Contractor Fee (5%)	$ 5,100,000
Contingency and Program Management (22.5%)	6,150,000
Project Management, Design, and On-Site Construction Management	1,275,000
Operation, Maintenance, and Monitoring Years 1 to 30 Present Worth at 7%	150,000
Five-Year Reviews	25,000
Total:	$ 34,850,000

Notes: *Rounded to nearest $25,000. Estimates are from FS Report. Accuracy is within +50% or – 30%. Volume estimates may be refined during the remedial design, potentially impacting cost estimates.

Expected Outcomes of the Selected Remedy

U.S. EPA estimates that it will take 12 months to implement the harbor cleanup action once equipment is mobilized to the site to conduct the work. After the active cleanup work is completed, the Agency expects to have achieved the target 0.2 ppm PCB (SWAC) goal for the sediments. Five years after the sediments are removed the Agency expects that PCB levels in resident, harbor-caught fish will begin to fall towards the 10-fold reduction goal for protectiveness plus reductions in PCB levels in frequent visitors such as carp. Fish consumption advisories will remain in place during this time and the State will evaluate the need for these advisories on a periodic basis. Benthic communities should be able to thrive along the armored cap areas and in other areas not impacted by the transport ship propellers.

Once cleanup construction is complete there should be no further impediments to future depth-maintenance dredging in the harbor, except for along the sheet-pile walls where the armored cap will be located.

A secondary benefit of Alternative 02 is the mitigation of four of the six the BUIs identified for Waukegan Harbor when it was listed as an AOC. The six BUIs are:

- Restrictions on fish and wildlife consumption;
- Degradation of benthos;
- Restrictions on dredging activities (commercial use impairment);
- Loss of fish and wildlife habitat;
- Degradation of phytoplankton and zooplankton populations; and,
- Beach closings.

Removal of the PCB-impacted sediment in the harbor will address the first four BUIs in the above list because removal of PCBs from the underwater environment will help to cause PCB levels in harbor-caught fish to fall to protective levels. Thus, restrictions on fish and wildlife consumption in the harbor AOC will eventually be eased. Benthos communities will thrive and fish habitat will improve once the PCBs are removed. In addition, maintenance dredging activity will no longer be restricted once the 1 ppm PCB sediment mass is removed from the harbor.

The Waukegan Municipal Beach is located adjacent to the harbor. In the past, the beach has been periodically closed during the summer due to high *e coli* bacteria levels in the water derived from sea gull droppings and not PCBs in the sediments. Since the removal of the PCB-impacted harbor sediment does not address the sea gull population, the harbor sediment cleanup action would not mitigate the beach closings BUI. Other methods will be employed to address this BUI.

The technical impracticability waiver of the State of Illinois discharge limit for mercury will not impact the above expected outcomes.

M. Statutory Determinations

Section 121 of CERCLA (42 U.S.C. § 9621) and the NCP state that the lead agency must select remedies for Superfund sites that are protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how Alternative D2 meets these statutory requirements.

1. Protection of Human Health and the Environment

Alternative D2 will protect human health and the environment by removing or reducing the PCBs in the sediment to meet the recommended 0.2 ppm PCB (SWAC) cleanup level. Reduction of PCB levels in the sediment will help to cause the PCB levels in resident, harbor-caught fish to begin to fall to protective levels for consumers of the fish in five years. The Agency estimates that the potential ELCR associated with the fish consumption exposure pathways will be reduced to within the target ELCR of less than 1 in 10,000 and the calculated HI quotients for consumers will fall to 1 or less.

The selected alternative presents no short-term threats to human health or the environment that cannot be readily controlled while the cleanup approaches are implemented.

There are several uncertainties associated with the harbor cleanup approach. One is that U.S. EPA assumed a proportional response would apply in the relationship between reductions in PCB concentrations of harbor sediment and resident, harbor-caught fish. (That is, if sediment PCB concentrations go down 1a-fold, the fish tissue PCB concentrations should also go down about 10-fold.) However, some scientists have suggested that as sediment PCB concentrations approach background levels, the degree of PCB concentration reduction in the sediment may have a smaller corresponding rate of reduction in fish tissue.

Another uncertainty is whether dredging can achieve the target 0.2 ppm PCB (SWAC) cleanup goal. U.S. EPA believes that hydraulic dredging has a greater likelihood of reaching the desired target PCB concentration in the harbor sediment than mechanical dredging. Hydraulic dredging is currently being used at other PCB-impacted sediment sites in the region and the 0.2 ppm PCB (SWAC) target is being reached by the end of the dredging work.

2. Compliance with Applicable or Relevant and Appropriate Requirements. Including Other Criteria. Advisories. or Guidance To Be Considered (TBCs)

Alternative D2 complies with the federal and state requirements that are legally applicable or relevant and appropriate to the remedial action outlined in Table 5.

Technical Impracticability for State's Mercury Discharge Limit

As to the mercury discharge standard outlined in 35 IAC 302, U.S. EPA has concluded that it is technically impracticable from an engineering perspective to treat dredge water that may contain mercury levels at 10 ng/L or less to reduce the mercury levels to meet the state's discharge limit of 1.3 ng/L. The Agency's conclusion that it is technically impracticable to meet the mercury discharge standard is based on information contained in the Feasibility StUdy (at pages 4-5 and 4-6), the October 26, 2009 technical memorandum prepared by CH2M Hill (Tech Memo), and two other reports[4] which are part of the OMC site Administrative Record.

Mercury occurs in the harbor sediment and is derived from other sources not related to OMC's past discharges of PCBs into former Boat Slip #3. For a baseline measurement, U.S. EPA took several samples of harbor water at various depths and measured mercury at a range of 1.4 ng/L 17 ng/L, which exceeds the state discharge standard of 1.3 ng/L (35 IAC 302.504 (Chemical Constituents - includes mercury) set by the State for discharge of water to the Lake Michigan Basin. Generally, higher mercury levels were associated with higher total suspended solids levels in these water samples. Although the dredging action will cause some mercury to be released from the dredged sediment into the waters derived from the sediment-dewatering step, U.S. EPA plans to minimize the release of mercury back into the harbor. PCBs may also occur in the dredge water as a result of dredging; thus, the Agency will filter the dredge water to remove suspended solids and then pass the water through granular activated carbon to remove PCBs before the water is discharged via a diffuser into the harbor. The filtration step will help to also reduce mercury levels in the filtered water to about 10 ng/L or less.

Based on a literature search, the Agency finds that there are two existing treatment technologies (ion-exchange resin, reverse osmosis) that may be capable of reliably reducing the 10 ng/L mercury levels in the dredge water to meet the 1.3 ng/L mercury discharge standard (Tech Memo). The other two reference documents report that these two treatment technologies are extremely sensitive to fouling and, even when they are operating at optimum conditions, they cannot remove enough mercury from the water (especially at the estimated 2,500 gpm flow rate) to meet the state discharge standard.

Despite invoking a TI waiver for the state mercury discharge, U.S. EPA believes the remedy will be protective. The state's 1.3 ng/L discharge standard is based on

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4 *Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy,* Ohio EPA, Foster Wheeler Environmental Corporation, and DRI-McGraw Hill (April *1997); Final Report - Mercury Source Control & Pollution Prevention Program Evaluation,* Larry Walker Associates (July 2002).

protection of the environment. Again, since there are no known treatment technologies to handle the estimated 2,500 gpm of filtered dredge water to remove enough mercury to reach the 1.3 *ng/L* discharge standard, it is impracticable to expect to be able to further treat the water for mercury removal to meet the protective standard at the ends of the discharge pipes. However, based on the volume of water in the harbor that will receive the effluent water via a diffuser, the Agency expects that a 10:1 dilution ratio of harbor water to discharge water will occur. (Water exchange in the harbor is variable, but there will also be additional dilution due to weather-driven inflows and outflows from Lake Michigan.) Although the Agency is not intending to meet the mercury discharge standard via dilution (indeed, the Illinois EPA water quality experts as well as U.S. EPA's regional water experts, accept the TI waiver for mercury based on the lack of capable treatment technology), the impact of the discharge via diffusers is achievement of the protective 1.3 *ng/L* mercury level in the harbor water body because of dilution for the duration of the 6-month dredging action.

The objective of this remedial action is to reduce available PCBs in the harbor so that PCB levels in resident fish will begin to fall to protective levels. Mercury levels were not an issue for this cleanup; thus, the mercury TI waiver will not impact the remedial action objective for the site.

Therefore, U.S. EPA has concluded that it has met the requirements for a technical impracticability waiver from this state standard, as outlined in CERCLA Section 121(d)(4)(0).

3. Cost-Effectiveness

U.S. EPA has determined that Alternatives 02 is cost-effective and represents a reasonable value for the estimated expenditure. The Agency made this determination using the following definition of cost-effectiveness from the NCP: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (40 CFR § 300.430(f)(1)(ii)(O».

Only two of the four active cleanup alternatives satisfy both of the threshold criteria (Le., are protective of human health and the environment and comply with ARARs). Since placing a cap on a federal channel would be legally difficult to implement, Alternatives 04 and 05 will not be evaluated for cost effectiveness, but Alternatives 02 and 03 can be evaluated for cost effectiveness. The estimated cost of Alternative 02 is slightly higher than the estimated cost of Alternative 03. However, the cost difference is within the error range for cost estimates at the feasibility study stage and thus the costs are essentially the same number. In addition, because Alternative 02 removes a greater amount of PCB-impacted sediment from the harbor than Alternative 03, it is a more permanent remedy that Alternative 03 and therefore its "costs are proportional to its overall effectiveness," as required by 40 CFR 300.430(f)(1)(ii)(0).

4. Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable

No alternatives use permanent solutions and alternative treatment technologies to address the residual PCBs in the harbor sediment. It is not cost-effective to treat PCBs at the low levels found in harbor sediment.

5. Preference for Treatment as a Principal Element

(See also Section K, above.) The PCB impacted sediment is not a principal threat waste at the site. Thus, the statutory preference for treatment as a principal element is not being met because existing sediment treatment processes were found to be either not effective for PCBs at the relatively low concentrations in the harbor sediment or not implementable at the scale required for the site.

Five-Year Review Requirement

U.S. EPA has completed three Five-Year Review Reports for the OMC site (1997, 2002, and 2007) due to residual contaminants being left on-site above levels that do not allow for unrestricted use and unrestricted exposure (UU/UE). After U.S. EPA completes Alternative 02, there will be residual contaminants remaining on-site in the PCB containment cells above levels that do not allow for UU/UE, as well as chemical contaminants levels being addressed by ongoing cleanup actions at other OUs. Thus, U.S. EPA will continue to conduct a statutory Five-Year Review at the OMC site every five years to ensure that the remedies selected in this ROD are, or will be, protective of human health and the environment.

N. Documentation of Significant Changes

U.S. EPA released the Proposed Plan for the Waukegan Harbor site for public comment on November 1, 2008. The Proposed Plan identified Alternative 02 as the preferred cleanup approach. The Agency reviewed all written and verbal comments submitted during the public comment period and determined that no significant changes to the remedy, as originally presented in the Proposed Plan, were desirable or appropriate.

TABLE 5
Summary of Federal ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
Chemical-Specific ARARsrrscs			
Clean Water Act Section 404 33 USC 1344; 33 CFR 323 40 CFR Parts 230 33 CFR Parts 320-330 40 CFR Part 132	Requires approval from USACE for discharge of dredged or fill material into waters of the United States (CWA Section 404 Permit). The Corps and USEPA regard the use of mechanized earth-moving equipment to conduct land-clearing, ditching, channelization, in-stream mining or other earth-moving activity in waters of the United States as resulting in a discharge of dredged material unless project-specific evidence shows that the activity results in only incidental fallback. Discharges of dredged or fill materials are not permitted unless there is no practicable alternative that would have less adverse impact on the aquatic ecosystem. Any proposed discharge must avoid, to the fullest extent practicable, adverse effects, especially on aquatic ecosystems. Unavoidable impacts must be minimized, and impacts that cannot be minimized must be mitigated. 40 CFR Part 132 provides guidance for setting discharge limits for bioaccumulative contaminants such as PCBs.	2, 3, 4, 5	The substantive requirements of a permit for discharge of dredged materials onto the OMC Plant 2 site will be met. Though actual discharge of dredged material back into the harbor is not anticipated, excavation within the harbor constitutes discharge of dredged material. Requirements are likely to include measures to minimize re-suspension of sediments and erosion of sediments during excavation. Discharge limits for PCBs will likely be set at non-detectable levels.
Federal Water Pollution Control Act as amended by the Clean Water Act of 1977, Section 208(b)	The proposed action must be consistent with regional water quality management plans as developed under Section 208 of Clean Water Act.	2, 3, 4, 5	Substantive requirements adopted by the state pursuant to Section 208 of the Clean Water Act would be applicable to direct discharge of treatment system effluent or other discharges to surface water.
Federal Water Pollution Control Act as amended by the Clean Water Act of 1977, Section 304	Establishes water quality criteria for specific pollutants for the protection of human health and aquatic life. These federal water quality criteria are non-enforceable guidelines used by the state to set water quality standards for surface water.	2, 3, 4, 5	TBC. Point source discharges from sediment dewatering will meet requirements of NPDES discharge permit. Water quality criteria are TBCs used in setting standards for discharges to surface water.

TABLE 5
Summary of Federal ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
40 CFR Parts 122, 125	Requires the development and implementation of a stormwater pollution prevention plan or a stormwater best management plan. Also outlines monitoring and reporting requirement for a variety of facilities.	2, 3, 4, 5	May be applicable to runoff from construction activities depending on the nature of the remedial action selected.
40 CFR Part 131-Water Quality Standards	States are granted enforcement jurisdiction over direct discharges and may adopt reasonable standards to protect or enhance the uses and qualities of surface water bodies in the state.	2, 3, 4, 5	Applicable to direct discharge of treatment system effluent.
Location-5pecific ARARsfTBC			
Great Lakes Water Quality Agreement of 1978	Calls for prohibition of the discharge of toxic substances in toxic amounts and for the virtual elimination of the discharge of persistent substances.	2, 3, 4, 5	TBC. Standards established by the agreement are policies to be considered.
Fish and Wildlife Coordination Act 16 USC § 661 et seq. 16 USC § 742 a 16 USC § 2901 40 CFR 6.302 50 CFR 402-Fish and Wildlife Coordination Act	Requires consultation when a modification of a stream or other water body is proposed or authorized and requires protection of fish and wildlife from adverse effects of site action.	2, 3, 4, 5	ARAR. Relevant and appropriate for Waukegan Harbor AOC for removal of contaminated sediment.
Coastal Zone Management Act 16 USC § 1451 et. seq. 15 CFR 930	Requires that Federal agencies conducting activities directly affecting the coastal zone conduct those activities in a manner that is consistent, to the maximum extent practicable, with approved State coastal zone management programs.	2, 3, 4, 5	Applicable to dredging and in situ capping, and any construction in the coastal zone.

TABLE 5
Summary of Federal ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
Endangered Species Act of 1973 16 USC § 1531 et seq. 50 CFR 200	Requires that Federal agencies insure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify critical habitat.	2, 3, 4, 5	No endangered species known to be present that would be affected by sediment excavation activities.
Rivers and Harbors Act of 1899 Section 10 (33 USC § 401et. seq.) 33 USC 403 33 CFR 322	Requires approval from USACE for dredging and filling work performed in a navigable waterway of the U.S. Activities that could impede navigation and commerce are prohibited.	2, 3, 4, 5	The substantive requirements of a permit for dredging the harbor will be met, as permits are not required for Superfund response actions. Typical requirements of dredging permits include measures to minimize re-suspension of sediments and erosion of sediments and stream banks during excavation.
National Historical Preservation Act 16 USC § 661 et seq. 36 CFR Part 65	Establishes procedures to provide for preservation of scientific, historical, and archaeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program. If scientific, historical, or archaeological artifacts are discovered at the site, work in the area of the site affected by such discovery will be halted pending the completion of any data recovery and preservation activities required pursuant to the act and its implementing regulations.	2, 3, 4, 5	May be relevant and appropriate during the remedial activities if scientific, historic, or archaeological artifacts are identified during implementation of the remedy.
Executive Order 11990 50 CFR Part 6, Appendix A	Requires actions to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.	2, 3,4, 5	TBC. Will be considered for wetlands if present within sediment disposal areas.
Executive Order 11988 50 CFR Part 6, Appendix A	Requires actions to reduce the risk of flood loss; to minimize the impact of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains.	2, 3, 4, 5	TBC. Will be considered for floodplains if present within sediment disposal areas.
Great Lakes Water Quality Initiative Part 132, Appendix E	Provides guidance to Great Lakes states regarding wastewater discharge, stating that lowering of water quality standards via wastewater discharge should be minimized.	2, 3, 4, 5	TBC. Considered as guidance.

TABLE 5
Summary of Federal ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
Action-Specific ARARsITBC			
Clean Air Act 40 CFR 50-99	Specifies requirements for air emissions such as particulates, sulfur dioxide, VOCs, hazardous air pollutants, and asbestos.	2, 3, 4, 5	ARAR. Particulates are not likely to be generated during excavation of sediments. Best available practices to control particulates will be used, as needed, during the dewatering of sediments.
40 CFR 241-Guidelines for Land Disposal of Solid Wastes	Offsite solid waste land disposal units must meet the federal guidelines for the land disposal of solid wastes.	2a, 3a, 4a	Applicability depends on waste classification for soil and water treatment residuals.
Subtitle D, 40 CFR 257-Griteria for Classification of Solid Waste Disposal Facility and Practices	Sets standards for land disposal facilities for nonhazardous waste.	2a, 3a, 4a	Applicable to water treatment residuals and to transport and disposal of any nonhazardous solid waste offsite.
40 CFR 262 and 263 49 CFR 100 through 199	Establishes responsibilities for transporters of hazardous waste in handling, transportation, and management of the waste. Sets requirements for manifesting, record keeping, and emergency response action in case of a spill.		Not ARARs. The sediments are not hazardous waste.
Subtitle C, 40 CFR 260 through 264	Regulates the generation, transport, storage, treatment, and disposal of hazardous wastes generated in the course of a remedial action. Regulates the construction, design, monitoring, operation, and closure of hazardous waste facilities.		Not ARARs. The sediments do not have to be managed as containing listed hazardous waste because specific documentation of the release of a listed waste to the sediments is not available. The sediments also are not characteristic waste, and are exempted from regulation under RCRA because CWA Section 404 applies to the cleanup activity (40 CFR 261).
40 CFR 264, Subpart K-Surface Impoundments (40 CFR 264.221 to 264.228)	Establishes the design and operating, monitoring, and closure requirements for surface impoundments containing hazardous waste. Requires that all impoundments have a liner system to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or groundwater or surface water any time during the life of the impoundment.		Not ARARs. The sediments are not hazardous waste.

TABLE 5
Summary of Federal ARARs

Citation	Requirement/Purpose	Alternatives Affected	**ARAR** Status
40 CFR 264, Subpart M-Land Treatment (40CFR 264.271 to 264.280)	Establishes the demonstration program, design and operating, monitoring, and closure requirements for hazardous waste land treatment units.		Not ARARs. The sediments are not hazardous waste.
40 CFR 268 Land Disposal Restrictions	The land disposal restrictions require treatment before land disposal for a wide range of hazardous wastes.		Not ARARs. The sediments are not hazardous waste.
Toxic Substances Control Act (TSCA) PCB Remediation Wastes 40 CFR 761.61	Specifies requirements for self-implementing on-site cleanup of PCB remediation waste.		Not an ARAR. Requirements are not binding on CERCLA sites (761.61 (a)(1)(ii». Self-implementing requirements are not applicable to sediments.
TSCA Site Cleanup. (761.61 (a)(5)(B)(2)(iii).	Remediation waste with PCBs> 50 mglkg must be disposed of in a TSCA chemical waste landfill or a RCRA hazardous waste landfill.		Not an ARAR. Sediments have PCB concentrations < 50 mglkg. If PCBs> 50 mglkg are excavated, however, disposal will be performed in accordance with these requirements.
TSCA Performance-based Cleanup (761.61 (b)(3».	Material that has been dredged or excavated from waters of the United States must be managed in accordance with a permit issued under section 404 of the Clean Water Act, or the equivalent of such a permit.	2, 3, 4	ARAR. Although a permit is not necessary for a Superfund site, the substantive requirements of the permit must be met.
TSCA (40CFR 761.65) Storage for Disposal	Bulk PCB remediation waste containing> 50 *mg/kg* PCBs may be stored onsite for up to 180 days, provided controls are in place for prevention of dispersal by wind or generation of leachate. Storage site requirements include a foundation below the liner, a liner, a cover, and a run-on control system.		Not an ARAR. Sediments have PCB concentrations < 50 mglkg; however, if PCBs> 50 mglkg are excavated, storage piles will be designed to meet these requirements. An extension on the 180-day storage limit could be obtained if needed through a notification to EPA per 40 CFR 761.65 (a).

TABLE 5
Summary of State ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
Chemical-Specific ARARsfTBCs			
Title 35, Subtitle B: Air Pollution	Regulations contain specific requirements that pertain to allowable emissions of criteria pollutants from a number of air contaminant source categories and processes.	2,3,4	ARAR. Substantive requirements for air emission control must be met.
IAC 35, Part 212 Visible and Particulate Matter Emissions	Regulations contain specific requirements that pertain to allowable emissions of fugitive particulate matter.	2,3,4	ARAR. Dust control must be implemented to control visible particulate emissions.
IAC 35, Part 245 Odors	Regulations specify how to determine whether a nuisance odor is present.	2,3,4	ARAR. Odor control may be necessary if it is determined that a nuisance odor is present as a result of sediment remediation.
IAC 35, Part 104, Subpart B, Variances	Regulations regarding basis for and process regarding the issuance of variances	2,3,4,5	ARAR, the substantive requirements for ammonia discharge will be met; the requirement for mercury is to be waived due to technical impracticability.
IAC 35, Part 302 Surface Water Standards	Designates surface water quality standards used in setting effluent limits for discharges to surface water. Total ammonia in the harbor must not exceed 15,000 **µg/l.** and in the open waters of Lake Michigan must not exceed 20 **µg/l.** The acute (A; within mixing zone) and chronic (C; outside mixing zone) aquatic life standard for unionized ammonia for the harbor are as follows: April to October - 330 **µg/l** (A) and 57 **µg/l** (C) November to March - 140 **µg/l** (A) and 25 **µg/l** (C). PCBs- human health standard for the harbor is 0.000026 **µg/l** and the wildlife standard is 0.00012 **µg/l**.	2,3,4,5	ARAR The standards are used in setting the discharge limits for discharges to surface water. The harbor waters are defined as Lake Michigan basin water while water outside the harbor are defined as Open Waters of the Lake Michigan basin.
IAC 35, Part 304 Effluent Standards	Designates specific effluent limits for discharges to surface water.	2,3,4,5	ARAR. Substantive requirements must be met for discharges to surface water of water from sediment dewatering.
IAC 35, Part 309 Permits	Designates process used in setting NPDES effluent limits for discharges to surface water.	2,3,4, 5	ARAR. Substantive requirements must be met for discharges to surface water of water from sediment dewatering.

TABLE 5
Summary of State ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
IAC 35, Part 307 Sewer Discharge Criteria, 1101-1103 General and Specific Pretreatment Requirements.	Designates general requirements for discharges to POTWs such as no discharge of pollutants which pass through the POTW or interfere with the operation and performance ofthe POTW. Also gives specific limits for discharge of certain pollutants.	None	ARAR. Substantive requirements must be met for discharges to North Shore Sanitary District POTW of water from sediment dewatering.
IAC 35, Part 310 Pretreatment Programs. 310.201-202.	Designates general requirements for discharges to POTWs such as no discharge of pollutants which pass through the POTW or interfere with the operation and performance of the POTW. Also requires POTWs to develop Pretreatment programs.	None	ARAR. Used by Northshore Sanitary District in setting pretreatment discharge requirements for discharge of water from sediment dewatering.
IAC 35, Subtitle G: Waste Disposal, Subchapter c: Hazardous Waste Operating Requirements, Parts 720- 729.	Standards applicable to hazardous waste generators, transporters and operators of hazardous waste treatment storage and disposal facilities.		Not an ARAR. The sediments are not required to be managed as containing listed hazardous waste because specific documentation of the release of a listed waste to the sediments is not available. The sediments also are not characteristic waste. Also the sediments are exempted from regulation under RCRA because CWA Section 404 applies to the cleanup activity (40 CFR 261 (g».

TABLE 5
Summary of State ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARAR Status
lAC 35, Subtitle G: Subchapter f: Part 740 Site Remediation Program, Section 740.535 Establishment of Soil Remediation Zones.	Presents requirements for the site remediation program and specific requirements for establishment of soil management zones (SMZ). SMZs can be used for onsite placement of contaminated soils for structural fill or land reclamation or consolidation of contaminated soils within a remediation site. Soil to be placed in the SMZ must have PCBs < 50 ppm. Also, all exposure routes related to the SMZ must be addressed. The SMZ must have institutional controls and an engineered barrier meeting the requirement of 742.1005. For the direct contact pathway an engineered barrier may be buildings, highways, compacted clay, asphalt or concrete or 3 ft of soil. Where the leaching to groundwater pathway poses unacceptable risk the engineered barrier may include clay, concrete, asphalt or other material approved by tEPA. Soil with contaminants exceeding criteria cannot be placed in areas of soil meeting criteria (Le. consolidation area also must exceed at least one of the residential Tier 1 soil remediation objective values in lAC 35 742 Appendix B table A).	2b, 3b, 4b	ARAR. Remediation program requirements must be met for remediation of PCBs in sediment. SMZ can be used for placement of contaminated sediment onsite as long as consolidation area exceeds residential soil remediation objective values.
lAC 35, Subtitle G: Subchapter f: Part 742. Tiered Approach to Remedial Action Objectives.	Presents requirements for the tiered approach to corrective action objectives (TACO).	2, 3, 4, 5	ARAR. Remediation program requirements must be met for remediation of PCBs in sediment.
lAC 35, Subtitle G: Subchapter i: Parts 807 to 815 Solid Waste and Special Waste Hauling.	Presents requirements for hauling and disposing solid wastes and special wastes. Includes requirements for new solid waste landfills.	2a, 3a, 4a	ARAR. Contaminated sediment must be transported and disposed in accordance with requirements of lAC 35 Subchapter L New landfills for offsite disposal of contaminated sediment must meet the requirements of Part 811.

TABLE 5
Summary of State ARARs

Citation	Requirement/Purpose	Alternatives Affected	ARARStatus
IAC 35, Subtitle G: Subchapter i: Part 808 Special Waste Classifications.	Special waste must be treated, stored or disposed at a facility permitted to manage special waste. Presents the special waste classes and the method to determine whether the solid waste is a special waste and if so, whether it is Class A (all non-Class B special wastes) or Class B (low or moderate hazard special wastes). RCRA hazardous waste is not included within the special waste classes.	2a, 3a, 4a	ARAR. Contaminated sediment with PCBs is a Class A special waste. The main factor affecting the classification is the large volume of contaminated sediment to be disposed rather than the PCB concentration. Offsite disposal of PCB contaminated sediment must be at a Solid Waste landfill permitted to receive Class A special waste unless IEPA specifically allows otherwise.
Title 35, Subtitle H: Noise	Regulations contain specific requirements that pertain to nuisance noise levels.	2, 3, 4, 5	ARAR. Noise levels will need to be controlled if noise reaches nuisance levels.
Lake County Stormwater Management Commission, Watershed Development Ordinance	Regulations specify performance standards for stormwater control.	2,3,4,5	ARAR. Activities such as sediment dewatering or sediment disposal need to be evaluated relative to stormwater controls.

RESPONSIVENESS SUMMARY

Waukegan Harbor Site
Waukegan, Lake County, Illinois

The U.S. EPA met the public participation requirements of Sections 113(k)(2)(B)(i-v) and 117(b) ofCERCLA (42 U.S.C. §§ 9613(k)(2)(B)(i-v) and 9617(b» during the remedy selection process for the Waukegan Harbor operable unit (OU) of the Outboard Marine Corporation (OMC) site. Sections 113(k)(2)(B)(iv) and 117(b) require U.S. EPA to respond "...to each of the significant comments, criticisms, and new data submitted in written or oral presentations" on a proposed plan for a remedial action. This Responsiveness Summary addresses those concerns expressed by the public, potentially responsible parties (PRPs), and governmental bodies in written and oral comments the Agency has received regarding the proposed remedy for the site.

The U.S. EPA has established information repositories for the OMC site at the following locations:

- U.S. EPA - Region 5, Records Center, 77 W. Jackson Blvd., Chicago, IL 60604
- Waukegan Public Library, 128 N. County St., Waukegan, IL 60085

An Administrative Record that contains all information the Agency used to select the cleanup remedy for the Waukegan Harbor OU is also available to the public at these locations.

Background

OMC conducted an initial cleanup of Waukegan Harbor under U.S EPA oversight in 1990-1992 by dredging the sediment in the northern harbor segment to achieve a 50 ppm PCB cleanup goal. OMC also excavated soil on its OMC Plant 2 property to achieve the 50 ppm PCB cleanup goal and placed all of the spoils into three containment cells it built for the cleanup action. By 1993, measured PCB levels in harbor-caught fish had dropped dramatically from pre-cleanup levels; however, the PCB levels in the fish still exceeded health-based consumption advisory levels.

OMC declared bankruptcy in December 2000, began to liquidate its assets in August 2001, and was later allowed to legally abandon its unsold Waukegan properties in December 2002. Meanwhile, U.S. EPA released the second OMC site Five Year Review Report (FYRR) in September 2002 in which the Agency stated that the 50 ppm PCB cleanup level for harbor sediment was too high because measured PCB levels in harbor-caught fish still exceeded target health-based levels for human consumption. U.S. EPA recommended that a study commence to determine a PCB cleanup level for the sediment that would be protective of human health and the environment.

Also in 2002, the Great Lakes Legacy Act (GLLA) was enacted to provide for the cleanup of Great Lakes "Areas of Concern" (AOCs) such as the Waukegan Harbor site. Under the GLLA, the federal government can pay for up to 65 percent of the total costs of cleaning up AOCs in partnership with non-federal sponsors who fund up to 35 percent in a cost-sharing arrangement. After the Agency released the second OMC site FYRR, U.S. EPA transferred the responsibility for site cleanup to the Great Lakes National Program Office (GLNPO) in the hope that the Agency might be able to address the residual PCBs in the harbor sediment under the GLLA instead of Superfund.

In consultation with Illinois EPA, U.S. EPA began remedial investigation (RI) and feasibility study (FS) work at the harbor in 2003. The Agency sampled the harbor sediment in 2003 and 2005 to determine the nature and extent of residual PCB contaminants in the sediment as well as taking readings to determine sediment depths in all parts of the harbor. Several area stakeholders, including local industries, the City of Waukegan, and the U.S. Army Corps of Engineers (USACE) participated in the study and helped craft plausible solutions for cleanup of the harbor. By late 2006, the stakeholders had reached agreement on a proposed clean up for the harbor with the City taking the lead local sponsor role. The City presented a proposed harbor cleanup plan to GLNPO for remediation under the GLLA in February 2007 that included the required 35 percent local cost share, and a Project Agreement for Remedial Design was entered into between the City and U.S. EPA. However, by May 2007, the City had decided it wanted to take a different direction for harbor cleanup and U.S. EPA terminated the Project Agreement for RD in November 2007.

U.S. EPA issued the third OMC FYRR in September 2007. The Agency indicated in the report that the initial 50 ppm PCB cleanup level in the sediment was not protective and that, based on a human health risk assessment, a 0.2 ppm (surface weighted average concentration (SWAC» PCB sediment cleanup goal would be protective of human health. U.S. EPA reassigned the harbor site back into the Superfund program in November 2007 and immediately began a remedial investigation and feasibility study at the harbor using the recent GLNPO data. The Agency issued an RI Report in April 2008 and a FS in November 2008. U.S. EPA evaluated protective cleanup measures in the FS so that the Agency may amend the original 1984 ROD, as amended by the 1989 ROD Amendment, to provide for a protective cleanup action in the harbor.

On about November 1, 2008, U.S. EPA issued a proposed plan fact sheet to the public that summarized the results of the RI and FS for the Waukegan Harbor operable unit and presented the Agency's recommended cleanup remedy for the harbor. The Agency made the proposed plan available for an initial 60-day public comment period from November 3,2008 through January 5,2009. U.S. EPA placed an advertisement announcing the availability of the proposed plan and the start of the comment period in both the *News-Sun* and the *Nueva Semana,* local newspapers of wide circulation in the Waukegan area. Staff also hand-delivered fact sheets translated into Spanish to area churches for distribution. Each fact sheet contained an EPA-addressed comment page to facilitate receipt of mailed comments. U.S. EPA accepted written, e-mailed, or faxed comments during the comment period.

U.S. EPA held a public meeting and public hearing at the Jane Addams Center, a Waukegan Park District facility, on November 13, 2008, to discuss the results of the remedial investigation, to answer any questions regarding the proposed cleanup actions, and to take oral comments regarding the proposed cleanup action. About 40 people, including local residents, attended the public meeting. A court reporter documented formal oral comments on the proposed plan during the public meeting, and U.S. EPA placed a transcript of the public comments into the information repositories and the Administrative Record. The Agency received seven oral comments concerning the proposed plan at the public meeting. The Agency also received a request at the meeting on behalf of the City of Waukegan to extend the comment period by 30 days. The Agency subsequently granted this request and extended the comment period until February 4, 2009.

U.S. EPA received written comments by letter, e-mail and fax from 25 people and organizations concerning the proposed plan during the comment period. The Agency also received a written request from the City for a second 30-day extension to the comment period, which was not granted. The comments received during the public comment period and our responses to these comments are included in this Responsiveness Summary, which is a part of the Record of Decision Amendment for the Waukegan Harbor site.

Summary of Significant Comments

A. Written Comments

Basically, the sentiment of those who sent in a written comment on the harbor proposed plan fell into one of two categories: support for the complete environmental dredging alternative (Alternative 02) in the proposed plan; or support for the harbor capping alternative (Alternative 05) evaluated in the FS. No one commented that the No Action (Alternative 01) or the partial dredging/partial capping remedies (Alternatives 03 and 04) were desired or appropriate.

1. Support for Alternative 02

A total of 21 people or organizations wrote to U.S. EPA in support of Alternative 02. U.S. EPA will place each of the comment letters into the administrative record for the site and presents excerpts from them below:

a. U.S. Representative Mark Kirk, 10th District, IL; via letter:

Rep. Kirk stated in his comment letter that he supported the EPA cleanup plan for the harbor and that U.S. EPA should not delay the remediation any longer. He commented that

> "The plan chosen by EPA... would accomplish all the cleanup goals in a timely and cost effective manner. This option is also the most comprehensive and

environmentally responsible, as it would permanently remove the contamination from the harbor. Capping the sediment would only create a barrier between the pollution and our waters - leaving us to face the possibility that we would have to start the cleanup all over again should leakages occur. It is crucial that we clean up the harbor and clean it up properly."

b. Sandy Kubillus, Waukegan, IL, via e-mail:

"I live in walking distance of the harbor and visit it often. I feel that a clean harbor will definitely help the Waukegan economy, the property values within the city, and the health of its residents."

c. Keith Gray, Mettawa, IL, via e-mail:

"...this is a good project in that it protects the environment, removes toxins from the source of our drinking water, and makes the consumption of fish from the lake safer for future generations, all things that are difficult to put a price on.

"...this project matches perfectly the initiatives put forth by the new administration - that is to jump start the economy by funding public works projects. This clean up would not only create, but also preserve local jobs. It will pump over $30 million in an area hard hit by the slowing economy, and increase the property values near the work area."

d. Mitchell Beales, Waukegan, IL, via e-mail:

"Environmental dredging with residual sand cover is clearly the remedy that should be implemented. It leaves the least amount of toxic material in place as a potential time bomb for future generations. It also maximizes options for future use of the harbor. Water transportation and wind powered recreation can be expected to become more important as fossil fuel resources are diminished. These opportunities must be preserved."

e. Penny Bouchard, Beach Park, IL, via e-mail:

"I believe the harbor should be cleaned up by permanently removing the PCBs using alternative #2 so that the health of people of all economic levels is protected once and for all and that all citizens may eat the fish using the same consumption criteria as the rest of Lake Michigan.

"Secondly, please do not extend the comment period for this project an additional time. Two extensions are enough and I believe it is time to move forward on this project and make it shovel ready."

f. John Ohl, Bartlett, IL, via e-mail:

> "On behalf of all the membership of Salmon Unlimited of Illinois, we fully support option two for the cleanup of PCBs in Waukegan Harbor with post cleanup monitoring of fish and sediment samples over a period of no less than 9 years to verify results. We feel cleanup activities should proceed as soon as this option is approved and funded."

g. Katie Traer, Waukegan, IL, via e-mail:

> "I believe it is extremely important to use the EPA recommended clean-up option (Option 02) … Once the harbor is remediated, the property values surrounding the harbor will increase by preserving the recreational and navigational uses. Also, fisherman will be able to eat their catch without worrying about their health.
>
> "The remediation will help with the city of Waukegan's economy as well as quality of life. If only capping the harbor sediment is carried out, future development on the property will not be able to occur due to zoning restrictions, but if remediation occurs, future development will be an option."

h. Ralph Eiseman, Skokie, IL, via e-mail:

> "Option 2 seems to be the best choice for OMC super fund cleanup of Waukegan Harbor since it allows maximum future use of Waukegan Harbor. This is based upon my need as a birder and as a former high school Ecology teacher."

i. Bill Muno, Evanston, IL; via e-mail, on behalf of the Alliance for the Great Lakes:

> "We support U.S. EPA's recommended cleanup option (02)... Since this is the most expensive option, we encourage U.S. EPA to consider other disposal options, which might have the potential to reduce the overall cost of this option.
>
> "At the November 13, 2008 public meeting some comments were made that the clean-up of Plant 2 should be given a higher priority for funding over the clean-up of the Harbor. We strongly disagree. The Harbor clean-up will provide a greater degree of protection of human health and the environment than the clean-up of Plant 2. Also, the Harbor clean-up will allow the delisting of the Harbor as a Great Lakes AOC to proceed which will have a positive effect on U.S. relations with Canada under the IJC agreements. Finally, the Harbor clean-up will complete this operable unit which was started 18 years ago.
>
> "We are aware that Superfund money available for "new starts" is limited. Also, the national Superfund Priority Panel may not look favorably on a clean-up option that is the most expensive. This could delay the start of construction once the design is completed. However, the less costly options (04 and 05) would restrict

commercial use of the Harbor, a potential Federal ARAR, and may not receive a permit from the Corps of Engineers. The remaining option (03) is within the range of cost estimating error to option 02."

j. **Larry** Brewer, Lafarge North America, Waukegan, via e-mail:

"The EPA's recommended Option 2 as was stated in the November 13, 2008 meeting in regards to the clean-up of the Waukegan Harbor by Super Fund is one that Lafarge feels would be best beneficial for our long term plans. This would help all industry survive and keep the Waukegan Harbor a safe haven when ships are in need of shelter."

k. **Duncan** Henderson, Waukegan Port District, via letter:

"I support the U.S. Environmental Protection Agency's proposed Remedial Action Objectives (RAO) for the polychlorinated biphenyls (PCBs).

"...the Waukegan Port District is in the process of developing an alternate concept to construct an in-water confined disposal facility (CDF) to be generally located south of the federal pier and east of the South Harbor marina. It is our opinion that this concept will provide the Agency with a significant cost savings alternative to contain the dredged material as well as provide a beneficial end land use alternative to expand the recreational marina for the benefit of the public..."

The Port District also indicated that it would like to help explore the option of conducting a deeper dredging project with the harbor dredging cleanup action to cost effectively support the future commercial/industrial needs of the harbor.

l. **Mary** Walker, Waukegan, IL; via e-mail:

"I am in favor of the Environmental clean up with residual sand cover. .. 1would prefer to see the model to enable keeping the navigational channel open. Waukegan has suffered under the effects of the PCB label for far too long, environmentally and economically.

"I strongly believe the shipping channel should remain open and enable the businesses to remain open and operational. The economics behind being able to bring in the cement and gypsum benefits the whole region. The short sightedness by some of closing the harbor to commercial traffic and as a refuge to vessels traveling from Chicago north will result in a tragedy one day. As the former Harbor Manager of the port, I witnessed numeral weather events resulting in vessels and barges berthing in the north harbor to avoid storms and damage.

"While I realize this alternative does not keep the channel open to commercial traffic, I still wish to make my feelings known on the previously decided options to no longer do navigational dredging. I look forward to a decision that benefits

both the city and the harbor. Your continued pursuit of this clean up is appreciated."

m. Roy Czajkowski, Waukegan, IL, via e-mail:

"I am writing in support of Option #2 as presented by the EPA for the purposes of public comment on this solution for existing remedial action for Waukegan Harbor. A project of this magnitude requires careful analysis of the science as well as community impact and I thank the EPA for their careful consideration of long term consequence to remedial action plan. Option #2 is the only remedial plan which offers good science because it removes harmful carcinogens permanently without impairments which create liability for future generations.

"There are those who prefer a capping solution be adopted for remediation of PCB's in the Waukegan Harbor will prove to be beneficial to the goals of expediency and advance agendas which blur the goals of stewardship of our natural and man made resources. The Federal Channel as well as the deep water port of refuge were created and have been maintained at great expense to the federal, state and local government. The fate of this resource should be protected because of its unique standing as a commercial deep water port that has always supported recreational usage. There will come a time when Great Lakes cruise ships, ferries, research ships, construction barges, and other maritime usage will be welcomed again at the Waukegan Harbor.

"Dredging the Waukegan Harbor [removes] the health hazard of PCB from the food chain for those who consume fish from the Waukegan Harbor. Removing contamination down to the glacial till where hot spots are present guarantees that there will be no doubt that the job of cleaning has been successfully accomplished. Dredging is good for the health of the fisherman and capping is bad for the future development of the Waukegan Harbor.

"Requests for extensions to "better study the harbor" as requested by the city only prolong a project which should have been finished years ago. The studies brought forth by the legions of researchers, has consistently concluded that removal of PCB's is the way to solve the pollution issue in the Waukegan Harbor. The research is valid, the project is shovel ready, and opportunity for funding is real.

"As a citizen of the City of Waukegan I am grateful for the leadership and interest which the federal government has shown in the past. Please continue the fine tradition of stewardship of the Great Lakes and make Option #2 a reality for the Waukegan Harbor."

n. Melissa Havermann, Waukegan, IL, via letter written on the comment sheet insert:

> "I [support] Option 2 with reduction of toxicity, mobility, or volume through treatment."

o. Chris Tanner, P.E., Libertyville, IL; via letter written on the comment sheet insert:

> "I wholly support the USEPA selection of that option that would remove all contaminated sediment, which in five years would allow PCB levels in harbor-caught fish to return to safe levels, and would allow navigational dredging without regard to contamination. These two benefits are important to the long-term health of local citizens and to the growth of the regional economy.
>
> "I dissent only in that some provision should be made to evaluate possible use of an existing water treatment system, presently engaged in remediation of the Coke Plant, for removal of ammonia in water derived from dredged sediment. I recognize that can occur only if the onset of dredging coincides with conclusion of groundwater treatment. However, if that opportunity occurs, the benefits of additional ammonia removal should at that time be weighed against the cost and feasibility of the treatment process.
>
> "Finally, I respect USEPA's commitment to 5-year reviews after remediation has been completed to make sure that remediation has been effective, and to also remain open to any new understandings of human and environmental toxicity, treatment technologies, and public perception."

p. Jean "Susie" Schreiber, Chair, Waukegan Harbor Citizens Advisory Group; via letter:

> "The majority of the members of the Waukegan Harbor Citizen's Advisory Group support alternative #2 as the USEPA Cleanup Plan for removing the remaining PCB pollution in the harbor under the Superfund program. We believe there should be no further extensions to "study how to clean the harbor." Far and enough public time, money and effort have been expended to find a suitable solution.

Ms. Schreiber also stated that the (majority of the members of the) CAG do not support the capping alternative because:

> "Capping alone will place institutional controls on the harbor. No further disturbance or dredging could be allowed. In effect, it is merely sweeping all of the pollutants under the rug.n

q. J. **Todd** Goeks, National Oceanic and Atmospheric Administration (NOAA), Chicago, IL, via letter:

> "... NOAA supports remedial actions that will protect human health and the environment, while not precluding future operational maintenance of the federal channel."
>
> "The combination of process options that EPA has assembled for its environmental dredging followed by sand cover, Option 02, provides the best combination of risk reduction and permanence, while reducing cost through on-site dredge material management and dredge water treatment."

Mr. Goeks indiGated that NOAA does not support the capping alternative because:

> "In addition to the lack of permanence, the capping scenarios evaluated would restrict harbor navigation depths in perpetuity.... implementation of alternatives including capping to elevations above 25 feet below [Great Lakes Low Water Datum] GLLWD would require EPA to first request Congress to re-authorize the federal channel to shallower depths to accommodate cap placement."

r. **Gerald** P. Carroll, VP, National Gypsum Company, Charlotte, NC, via faxed letter:

> "New NGC, Inc. d/b/a National Gypsum Company fully supports the United States Environmental Protection Agency's selection of Option 02 as the remedy for Waukegan Harbor. National Gypsum has manufactured wallboard at its plant on Waukegan Harbor since 1959 and looks forward to continuing to do so for decades to come... Essential raw materials are transported to our plant via cargo ships crossing the Great Lakes and entering Waukegan Harbor. Thus, maintaining the Harbor's commercial navigability is vital to our operation.
>
> "In selecting the remedy that is most permanently protective of human health and the environment, USEPA has also selected a remedy that acknowledges several other important criteria. In particular, current and future land use in the Harbor includes industrial users that rely on the deep draft navigability of the Harbor. ...without the Congressionally authorized federal channel National Gypsum could not operate its Waukegan plant. ..Any attempt to [cap or obstruct] the navigation channel would result in protracted and expensive takings litigation. The cost of takings litigation would inevitably exceed any perceived cost savings achieved through selection of a less expensive capping remedy.
>
> "The selected remedy has the added benefits of maintaining Waukegan Harbor as a harbor of refuge... [and addressing] the beneficial use impairments which caused Waukegan Harbor to be listed as an Area of concern by the International Joint Commission. Implementation of the selected remedy will bring the Harbor a long distance toward delisting as an Area of Concern."

s. John Beales, Jr., Waukegan, IL, via faxed letter:

> "I support the Option D-2 cleanup of Waukegan Harbor recommended by EPA. Any environmentalist should support options which do not force removal of the remaining commercial uses of the harbor."

t. John Rogner, U.S. Fish and Wildlife Service, Barrington, IL, via letter:

Mr. Rogner commented that Option D2:

> "If implemented, would benefit the fish and wildlife resources of the Waukegan area and Lake Michigan."

Mr. Rogner also expressed a concern about U.S. EPA's plan to avoid dredging near the harbor walls to prevent collapse and instead place a rock layer or cap over the impacted sediments left behind:

> "It is unlikely that this rock layer would stop bioturbation and the entry of PCBs into the food chain."
>
> "We recommend that you consider two possible options for addressing the contamination near the walls. The first option includes removing the fine grained sediments located near the walls ... the second option includes placement of a bioturbation barrier over the contaminated sediment prior to placement of the rock cap."

u. Jack Conarchy, Waukegan, IL, via e-mail:

> "I as a Waukegan resident fully support the United States Environmental Protection Agency plan to remove Polychlorinated biphenyls (PCBs) from the Waukegan Harbor by means of dredging.
>
> "If the lakefront industries were eliminated by capping of the PCBs I am quite fearful the EPA and City of Waukegan will be brought into litigation by these industries as their ability to do business has been negatively impacted."

Response:

U.S. EPA acknowledges the support of the above commenters concerning the U.S. EPA's proposal to select the dredging alternative for cleanup of Waukegan Harbor. The Agency agrees that the dredging alternative is protective of human health, may be easily implemented, meets applicable or relevant and appropriate requirements (ARARs) pertaining to the site, and takes into account the projected, albeit competing, future uses of the harbor. Although capping the harbor is also protective of human health and may be easily implemented technically, the dredging alternative is a more permanent solution than the capping alternative in that the residual PCBs are removed

from an environment where they cause harm (underwater) and are placed in an environment in which the contaminants will be effectively and safely managed (above ground). Capping would leave the contaminants in place and would also obstruct future depth-maintenance dredging activity in the harbor. In addition, the designation of the harbor as a federal navigation presents a significant legal impediment to capping the harbor.

Several commenters (i, k, o, t) provided helpful suggestions for strengthening the effectiveness and cost-effectiveness of the proposed dredging cleanup remedy. U.S. EPA will take these suggestions under advisement as it proceeds with the remedial design phase of the cleanup action.

Several commenters (a, e, m, p) called for no further extensions of the comment period so that the Agency may begin the harbor cleanup as soon as practicable. U.S. EPA agreed and declined to extend the comment period a second time.

2. Support for Alternative D5

A total of 4 people or organizations wrote to U.S. EPA in support of Alternative D5 (Capping). The Agency will place each of the comment letters into the administrative record for the site and excerpts from them are presented below:

a. Jeff and Amaryllis Wiligale, Waukegan, IL, via letter on the comment sheet insert:

> "We strongly recommend the EPA use Option D5: Cap Entire Harbor. This is the most cost effective use of our taxpayer money. The industry has had its day in Waukegan. If the Industry wants to continue to use the harbor for freighter traffic they should pay for the clean up."

b. Timothy F. O'Leary, The O'Leary Companies, Lake Forest, IL, via e-mail:

> "... 1am President of Southlake Investments, Inc., owners and developers of a large tract of land at the southern end of the Waukegan adjacent to Lake Michigan. We have received Conditional Use Permit and Zoning approvals from the City of Waukegan for our proposed mixed use development south of South Avenue.
>
> "I have a great deal of concern that the EPA's preferred cleanup plan will have an extremely negative impact on the redevelopment of the Waukegan Downtown and Lakefront areas. By following the Design Guidelines and Master Plan, a great deal of Economic Development can take place and the ensuing economic benefit will be felt by the City, County, State and the area at large. This will be accomplished by a very large increase in land values and the real estate tax revenue increases generated by implementation of the Master Plan. Additionally, many jobs will be created by all the construction activity and service jobs once the homes are complete.

'The Master Plan was developed at great cost in both time and money invested by the people of Waukegan and Lake County. That Plan needs to be taken as a whole document to guide the redevelopment of the New Waukegan Lakefront. To think that the lone two industrial uses can be left in the middle of the Harbor makes a mockery of the efforts put forth to recreate this valuable natural resource. Development will be greatly hindered by allowing these two companies to stir up the remaining sediment every time they enter the harbor.

"The only reason made for the EPA proposed solution is to preserve the last two industrial users still at the harbor. It seems to me that they are continuing to cause the PCB contaminants to be disbursed every time a ship makes delivery to the two industrial users. The few remaining jobs at the two industries do not warrant the additional expenditure of $25,000,000+ for a solution that is jeopardized every time a sea going vessel makes the tight turns to squeeze into the Harbor thus stirring up the remaining sediment. As the EPA states: ".. *not all PCBs can be removed this way.."* Also dredging will not occur too close to the harbor walls *"to avoid the potential for collapse."* Clearly, the continuation of allowing access to the deep draft vessels will continue to cause potential recontamination caused by the large strong propeller action.

"Please initiate Option 05 at a savings of almost $25,000,000 and with a more esthetically pleasing result that is in keeping with the wishes of the residents most directly involved."

c. Alderman Rick Larsen, Waukegan, IL, via e-mails:

"I am the 8th Ward Alderman for the City of Waukegan representing approximately 10,000 people. I support complete capping because it is the most cost effective cleanup alternative that meets the goal of being equally protective of human health and the environment as dredging and/or a combination of dredging and capping.

"Capping advances the City of Waukegan lakefront redevelopment plans much faster than allowing the dredging of the shipping channel would. The tax revenues, job creation and general economic growth of the region would be much enhanced over the other options under consideration.

"Using the earmarked 35 million dollars for cleaning up the OMC Plant 2 property and groundwater contamination and preventing it from leaching back into the lake water is of paramount importance. Failing to do that will render the Harbor cleanup efforts almost impotent from my point of view. We should attack that site first."

Response:

U.S. EPA agrees that capping the harbor would be protective of human health and the

environment much like the proposed dredging alternative. U.S. EPA agrees that capping would cost less than dredging. However, unless and until the federal channel is deauthorized by Congress, it would be difficult for the Agency to conduct a remedy that would impede the navigability of the harbor and interfere with the depth of the federal navigation channel. Also, unless the harbor depth is changed by an Act of Congress, or the harbor is deauthorized as a federal channel, the expected future use of the harbor is as a federal navigation channel. In addition, a remedy that impedes navigation in the harbor would potentially expose the United States to expensive takings litigation by the harbor industries that rely on deep-draft vessels to transport supplies to their companies. A potential cost savings of $25 million which might be realized by conducting the capping remedy could be dwarfed by an estimated $80 million or more takings claim from National Gypsum Company alone (see National Gypsum's comment in 1(r) above).

U.S. EPA agrees that the OMC Plant 2 property should be addressed as well to prevent recontamination of harbor sediment by PCBs. The OMC Plant 2 site, while separate from the harbor, is being scheduled for cleanup as soon as funding is made available.

U.S. EPA disagrees with the assertion that the dredging plan is contrary to the City's Master Plan for redevelopment. Dredging of the harbor does not preclude redevelopment of the property surrounding the harbor. In fact, dredging of environmental contamination would help remove the stigma of the contaminated harbor and thereby help foster redevelopment of the lakefront. Post-cleanup market forces will then determine whether industry stays or goes.

d. City of Waukegan, via letters and e-mails from Mayor Richard Hyde and Ray Vukovich, and from Jeff Jeep, special environmental counsel for the City. The City's comment documents are extensive but its comments can be briefly summarized as follows:

i. The City supports the complete capping alternative for the harbor cleanup and not the dredging alternative. Either remedy is protective of human health and costly, but the dredging alternative is too expensive.

ii. Will U.S. EPA impose a windfall lien on harbor-area parcels that encompass submerged lands within the harbor? Whether U.S. EPA will seek to impose a windfall lien on City-owned property [the northern harbor area adjacent to the Waukegan Coke Plant operable unit] is an issue of concern to the City.

iii. The City believes that U.S. EPA has failed to timely respond to a Freedom of Information Act (FOIA) request concerning the harbor cleanup proposal, therefore, we have denied the City "meaningful opportunity to comment" on the proposal.

iv. When does U.S. EPA intend to issue notice letters to certain harbor industries that they are potentially responsible parties (PRPs) under Superfund for the harbor cleanup? The judge's ruling on the City's lawsuit demonstrates that they are or should be PRPs.

v. U.S. EPA should extend the public comment period an additional 30 days based on the directions to the heads of Executive Branch departments and agencies given in the January 20, 2009, memorandum from Rahm Emanuel, President's Chief of Staff, to suspend all regulatory and rulemaking activities pending review and approval by the newly-appointed agency heads.

vi. "In deciding whether to spend $35 million to dredge the harbor for the benefit of industrial shipping, the Agency may not ignore the [City's] Master Plan." The future use of the harbor is for recreational boating not industrial shipping. Therefore, the Proposed Remedy is contrary to the interests of the City as expressed in the Master Plan. The City has demonstrated its commitment to a mixed residential commercial use of the land surrounding the Harbor through a number of City Council activities since 1996. The future use of land surrounding the harbor should dictate the use of the harbor. There is broad political support for the Master Plan, and the community accepts the master plan. Redevelopment of the harbor confers a substantial economic benefit to the community

vii. Superfund law states that U.S. EPA does not have to obtain federal, state, or local permits to conduct cleanup remedies. Thus. the Agency won't need a permit from the USACE to place a cap in the navigation channel of the harbor.

viii. Decisions concerning the redevelopment of the lakefront should be made by the City not U.S. EPA.

Response:

i. U.S. EPA acknowledges that the capping alternative is protective of human health and the environment, is less costly than the dredging alternative, and is easily implemented. However, the designation of the harbor as a federal navigation channel presents a significant impediment to implementing a capping remedy that would interfere with the congressionally-authorized navigation depth. Unless and until Congress deauthorizes the federal channel or raises its depth, this designation controls the future use and depth of the harbor.

In addition, the local industries, specifically National Gypsum (see Comment 1(r) above) have suggested that capping the harbor would result in an impermissible takings. The harbor industries rely upon the current navigation channel to ship in supplies using deep draft vessels. Raising the depth of the harbor would interfere with their ability to use the harbor, which might result in takings litigation against the United States. Their potential takings claim is estimated at $80 million or more.

ii. The Superfund statute permits U.S. EPA to place a lien on a property that the Agency is spending Superfund monies to clean up to prevent the property owner from realizing a windfall profit due to the cleanup. U.S. EPA always exercises enforcement discretion when deciding whether to place liens on affected properties. The Agency has not made a decision whether it will place a lien on the harbor properties being cleaned up under Superfund. However, placement of the lien does not impact remedy selection, because

remedies are selected based on the nine criteria outlined in the NCP at 40 CFR § 300.430(e)(9) (see discussion in the ROD Amendment at page 27, above). In this case the Agency selected the dredging remedy as it met the nine criteria, including implementability.

iii. U.S. EPA disagrees with the assertion that the Agency has denied the City "meaningful opportunity to comment" on the dredging proposal. The City has been active in legal and technical matters concerning the harbor cleanup since 2003 when the Great Lakes Legacy Act (GLLA) project commenced. Moreover, the Administrative Record (AR) on which our selection of the proposed plan is based was made available to all at the Waukegan Library since November 2008. The Agency concluded that a 90-day comment period is sufficient time to evaluate the information in the AR and provide meaningful comments on the proposed plan.

iv. Similar to our discussion of the Superfund lien issue, above, U.S. EPA has enforcement discretion concerning the issuance of special notice letters to PRPs. The Agency has not made a determination as to whether or not the harbor industries are PRPs for the harbor site. Again, remedy selection is based on the Nine Criteria, not the presence or lack of PRPs at the harbor site.

v. As U.S. EPA previously explained to the City (please see the Administrative Record - e-mail from Richard Karl to Ray Vukovich dated January 26, 2009), Rahm Emanuel's memorandum does not apply to the issuance of Records of Decision by U.S. EPA. In any event, this ROD will be issued well after the 30-day moratorium proposed in the above referenced memorandum. Therefore, U.S. EPA declined the City's request to extend the 90-day comment period on the harbor proposed plan by another 30 days. A 90-day comment period is sufficient time to evaluate the information in the AR and provide meaningful comments on the proposed plan.

vi. U.S. EPA has taken notice that the City Council has declared that the future of the harbor is for recreational boating, not industrial shipping in its Master Plan. The Plan also takes note at page 15 that the City should:

- "Promote Waukegan's maritime assets;
- Waukegan is the only deep-water harbor between Lake Calumet on Chicago's South Side and Milwaukee;
- The current Harbor is a major regional recreational Amenity."

U.S. EPA's dredging remedy is consistent with the above-expressed sentiments in the Master Plan, particularly as it allows for the maintenance of Waukegan's maritime asset as the only deep-water harbor between Chicago and Milwaukee, while a capping remedy does not. In addition, at this time the harbor is designated a federal navigation channel, and unless or until the depth is modified by Congress, that designation presents a significant impediment to capping the harbor. Finally, remediation of the contaminated sediments in the harbor does not run afoul of redevelopment of the land surrounding the harbor; in fact it will remove the stigma associated with the

contamination and thereby encouraging residential development on the land surrounding the harbor. U.S. EPA has, therefore, considered the City's Master Plan for this remedy.

vii. While Superfund law does state that U.S. EPA ("the President") does not have to obtain federal, state, or local permits to conduct cleanup remedies, the designation of the harbor as a federal navigation channel presents a significant legal impediment to capping that harbor. Unless and until Congress, which has authorized the harbor depth changes it, or deauthorizes it as a federal navigation channel, the Agency intends to respect that designation. In addition, while no permits are needed to remediate superfund sites, the substantive requirements of permits must be met. U.S. EPA is aware that the USACE is the agency responsible for issuing permits for dredging and filling federal waterways. USACE has indicated that it would not support the capping alternative and, therefore, the Agency believes that the substantive requirements of the permit to conduct a cleanup in the federal channel would preclude capping the channel.

viii. U.S. EPA agrees that decisions concerning the redevelopment of the lakefront should be made by the City (and impacted landowners) and not U.S. EPA. However, our proposed harbor cleanup plan does not preclude the City from implementing its Master Plan. Our cleanup plan removes contaminants from the harbor and enhances the City's ability to redevelop the lakefront. The market will decide whether the industry stays or goes once the cleanup is done.

B. Oral Comments (per transcript from the November 13, 2008 public hearing)

1. Martha Padilla-Ramos, Waukegan, IL:

"I would like to see the [fish-consumption advisory] signs [erected] regarding the level of mercury in the fish population and the PCBs in the Waukegan Marina Harbor in English and in Spanish."

Response:

Institutional controls such as fish-consumption advisories are a necessary part of the selected cleanup remedy. The State of Illinois has issued such advisories for Lake Michigan. U.S. EPA agrees that warning signs in English and Spanish should be placed at harbor fishing spots to alert anglers to the potential hazards of consuming their catch. The Agency will encourage Illinois to put up these signs as soon as practicable.

2. Paul Biehl:

"...this harbor is a harbor of refuge...And I don't believe capping is a foolproof answer as far as the health and safety [issue]. My thought is a complete dredging - seawall to seawall - to eliminate the PCBs. And I don't understand why new steel sheeting can't be driven to prevent the collapse of the seawalls..?"

Response:

U.S. EPA evaluated a seawall-to-seawall dredging option during the feasibility study and determined that it would be too costly to conduct such a remedy. We therefore screened out that alternative. The sheet walls are the responsibilities of the property owners and it is thought that requiring them to drive new walls behind the old would be too costly for the property owners.

3. **Paul** Geiselhart:

"... my concern is recontamination of the harbor from the properties adjacent to the harbor if we restore activity."

Response:

U.S. EPA agrees and notes that it is beginning to clean up the OMC Plant 2 property which is the source of the PCB pollution in the harbor. No other sites or industries in the harbor area have PCBs present. Thus, once the OMC Plant 2 PCB contamination is cleaned up, there will no longer be an uncontrolled source of PCB contamination to the harbor.

4. Mr. Brazen:

"I think the [proposed plan] presentation actually showed a history of dredging and redredging. And I think we are getting the cart before the horse because PCBs keep reappearing. So I don't think we should constantly be dredging the harbor as a result of the PCBs that show up either from hot spots or from leaching."

Response:

U.S. EPA agrees that a thorough dredging option as proposed is the proper course of action in the harbor.

5. Ray Vukovich, Director of Governmental Services, City of Waukegan, IL:

"... the one [alternative] that most closely aligns with the City of Waukegan master plan for the lakefront would be Alternative NO.5 [complete capping of the harbor]. [However] you would need to put that aside and make sure that the OMC Plant 2 [site was] fully remediated and then look at capping of the harbor."

Response:

U.S. EPA notes that it has completed the remedial design for the cleanup of the OMC Plant 2 site and funding is now available to conduct the cleanup, whereas U.S. EPA is just now selecting the harbor cleanup approach. Consequently, a remedial design

package for the harbor cleanup would not be completed until early 2010. Thus, cleanup of the OMC Plant 2 site will likely be conducted before the harbor cleanup work.

6. **Jeff** Jeep, Jeep and Blazer, LLC, special environmental counsel for the City of Waukegan:

Mr. Jeep's comments can be summarized as:

a. I would like an extension to the public comment period ("At a minimum we should have 60 days.")
b. Clean up the PCBs at the OMC Plant 2 site first so that they are not a source of more contamination in the harbor.

Response:

a. U.S. EPA notes that it agreed to extend the public comment period to February 4, 2009, from January 5,2009, giving a total of 90 days for people to comment on the proposed plan.

b. U.S. EPA notes that it has completed the remedial design for the cleanup of the OMC Plant 2 site whereas U.S. EPA is now just selecting the harbor cleanup approach. Consequently, a remedial design package for the harbor cleanup would not be completed until early 2010. Thus, cleanup of the OMC Plant 2 site will likely be conducted before the harbor work.

7. **Verena** Owen,

Ms. Owen stated that she supported the request to extend the comment period.

Response:

U.S. EPA notes that it agreed to extend the public comment period to February 4,2009, from January 5,2009, giving a total of 90 days for people to comment on the proposed plan.